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RECORDS OF BIG GAME



Yours faithfully
Ronald Ward

4. 4. 1940

1912

1912

3

Yours faithfully
Ronald Ward

RECORDS OF BIG GAME

WITH

THEIR DISTRIBUTION, CHARACTERISTICS,
DIMENSIONS, WEIGHTS, AND

MEASUREMENTS OF HORNS
ANTLERS, TUSKS, & SKINS

THIRD EDITION

BY ROWLAND WARD, F.Z.S.

AUTHOR OF 'THE SPORTSMAN'S HANDBOOK,' ETC.

WITH ABOUT 217 ILLUSTRATIONS

LONDON

ROWLAND WARD, LIMITED

"THE JUNGLE," 166 PICCADILLY, W.

1899

KF16668

798.



THIS BOOK IS DEDICATED
TO THE
SPORTSMEN OF THE WORLD
WITHOUT WHOSE DETERMINED PLUCK AND LOVE OF TRAVEL THESE RECORDS
COULD NOT HAVE BEEN PRODUCED, NOR COULD THE AUTHOR
HAVE SPENT A LIFETIME IN THE ART HE HAS
TRIED TO ADVANCE

PREFACE TO THIRD EDITION

IN the present edition, the finest known specimens of antlers, horns, tusks, and skins are, so far as possible, recorded. It has been found impracticable in some instances to verify the measurements of trophies in distant parts of the world; and such records must accordingly be taken on the responsibility of their respective owners or other persons who have been good enough to measure them. It is much to be regretted that one pair of hands and a steel-tape are not responsible for the measurements of all the actual "records." One of the many difficulties in connection with this compilation is due to the circumstance that different measurements of the same specimen are often sent me; this sometimes arising from the use of common tapes or string, which are absolutely unreliable unless checked at the time by a steel measure. In this connection I may mention that I shall at all times be pleased to cause such measurements to be carefully verified at my establishment in Piccadilly. With the horns of freshly killed hollow-horned ruminants an allowance for shrinkage should be made when comparing with older trophies. An average specimen of an *Ovis ammon* horn, for instance, will frequently shrink half an inch in length and proportionately in girth after it has left the field.

With the *Cervidae* many difficulties have arisen as to comparison; and I may point out that although length of antlers is invariably put at the top of the list, other particulars such as *number of tines, general symmetry, spread, and weight of antler*, are in many instances the making of a good trophy. Small specimens are frequently noted in order to include measurements from different localities, as well as to record horns of certain species, such as *Ovis poli*, etc., in which recently shot specimens do not approach those of the record example.

I have to thank many sportsmen and naturalists all over the world for the help they have afforded me.

To Mr. A. O. Hume, and Prince Henry of Liechtenstein, my special thanks are due.

In the present volume great care has been taken with regard to the accuracy of the numbers; and, considering that there are so many thousand measurements, it will be readily understood the task attempted has been one of no ordinary difficulty.

The new illustrations, numbering over fifty in the present volume, are nearly all produced direct from photographs of notable examples.

A new feature in this edition is the introduction of a short description of the leading characteristics and the exact geographical distribution of each species and race. This, it is hoped, will render the volume of additional value as a work of reference to the sportsman.

ROWLAND WARD.

PREFACE TO SECOND EDITION

SINCE the publication of the first edition of this work under the title of "Horn Measurements," I have been successful in collecting much new and valuable data bearing upon the measurements of horns and other statistics of Big Game. For this information I am to a considerable extent indebted to numerous sportsmen, and to the curators of some of the most important museums of the world, who have been kind enough to measure all the finest specimens in the collections under their charge. In addition to this valuable help, for which I desire to express my grateful acknowledgment, I have had a record carefully prepared of all the most remarkable specimens registered, as well as those that have from time to time passed through our hands. I am indebted to Mr. H. A. Bryden for much of the descriptive matter of the South African game. There will also be found embodied with all these new records numerous illustrations of typical heads, skulls, and horns drawn especially for this new edition.

In addition to this supplementary information, the new edition will be found to contain more exact localities than have hitherto been recorded, and we continue in constant correspondence with sportsmen in almost every part of the world with a view of still further completing our records.

R. W.

PREFACE TO FIRST EDITION

My object in producing this book is to start a record of Horn Measurements of the Great Game of the World. I only regret that it was not commenced at an earlier date, as in that case it would have been more complete. In my earlier life I had but little help, and often worked thirty hours at a stretch ; my work necessitated attention to specimens that demanded immediate treatment, and my love for reproducing life-like studies prevented me from keeping records.

The measurements presented here have been taken principally by one hand, and, for that reason, I value them the more. The dimensions from acknowledged authorities I naturally am not responsible for. This work is not designed to be in any way a scientific treatise, but is prepared for sportsmen and scientific men who are interested to see comparable measurements at a glance. I think these have not been produced in like form before. These records can be added to, and I shall feel indebted to sportsmen who will contribute any authentic record measurements. It must be borne in mind that many trophies which have passed through my hands are now scattered all over the world, and the dimensions of them, for the time, are

not recorded here. Some that I give now are fine measurements, some are only ordinary statistics, many are of new species altogether; these last being mainly a result of the quite recent opening up of Africa. The advice noted as to the way to measure must be dealt with strictly, for many persons measuring by different methods produce untrustworthy record. We have tried to be fair in producing the statistics, taking them rather under than over the mark; and the tape has not been pressed into corrugations of horns, but carried outside, over all inequalities.

R. W.

ABBREVIATIONS AND SIGNS

— Owner's measurements or other known authority.

♂ Male. ♀ Female. ... Unrecorded.

R, Right horn or antler. L, Left horn or antler.

Measurements are on the outside of the longest horn from base to tip ; with Deer from the bottom edge of burr, or coronet, to the highest tip point, except where notified to the contrary.

Circumference is at the base ; with Deer above brow tine ; in the Red Deer and Wapiti group between bez and trez.

Length is expressed in inches, when not otherwise noted.

Weights taken in the field should be accepted as approximate, and, unless mentioned, are of adult males.

Heights are in most cases taken at the shoulder of adult males (see p. 480).

P.Z.S. = *Proceedings of the Zoological Society of London.*

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ADDITIONS AND CORRECTIONS

OCTOBER 1899

Page.	Owner.
5. REINDEER OR CARIBOU, add— 62 5½ 40 50½ 21 + 17 Canada . . .	Sir Edmund G. Loder, Bart.
76. SWAMP-DEER.—The 41 and 39½ inch specimens on second and third lines should both read	Major C. S. Cumberland.
103. SOUTHERN GIRAFFE.—Fifth specimen (16 feet 6) should be a male.	F. C. Selous.
120. JACKSON'S HARTEBEE.—16½ inch specimen should be a female.	Mr. Justice Hopley.
221. MONGOLIAN GAZELLE.—The 14½ specimen should be on p. 222 (Persian Gazelle)	A. J. Grant.
246. PETERS' GAZELLE.—Add to Height at Shoulder, 26 to 33 inches.	
275. FRINGE-EARED BEISA.—First specimen should read— 33½ 7 13 ...	{ R. B. P. Cator.
297. GREATER KUDU.—Add before first specimen— 64 41 11 23 Mashonaland.	
	{ F. C. Selous.

lateral hoofs are unusually large and spreading; and there is a patch



RECORDS OF BIG GAME

Antlers of Male Woodland Reindeer. From a specimen in the British Museum.

REINDEER or CARIBOU (*Rangifer tarandus*).

DISTINGUISHED from all other deer by the presence of antlers in both sexes ; those of males being complex, with the brow tines palmated and often unsymmetrical, and the bez, or second tine, also generally expanded. The muzzle is entirely covered with hair, the ears and tail are short, the throat has a fringe of long hair, and the coat is very thick and of a nearly uniform clove-brown colour, with some white in the region of the tail, and on the under parts and legs. The false or lateral hoofs are unusually large and spreading ; and there is a patch

of long white hair covering a gland on the hock, but none on the hind cannon-bone. Height at shoulder reaching to 4 feet 10 inches (Newfoundland); weight of a full-grown Scandinavian stag 30 stone, clean (Abel Chapman); antlers average about 30 lbs. per pair.

Reindeer inhabit the circumpolar regions of both hemispheres, in Europe including Scandinavia, Lapland, and Northern Russia; their

Antlers of Male Woodland Reindeer from Nova Scotia.
From a specimen in the British Museum.

southern limit varies from 52° to 54° N. latitude, while they extend to between 80° and 81° northwards.

Six varieties, or local races, of reindeer are recognised: (1) the Scandinavian reindeer (*R. tarandus typicus*) of Northern Europe and Asia, which is a rather small animal with moderately expanded antlers; (2) the Spitzbergen reindeer (*R. tarandus spetzbergensis*), characterised by the peculiar form of the nasal bones of the skull; (3) the woodland

reindeer (*R. tarandus caribou*) of the forest districts of Arctic America, distinguished by its large bodily size and the short, much-palmated antlers; (4) the Newfoundland reindeer (*R. tarandus terræ-novæ*),

Side view of Antlers of Male Barren-Ground Reindeer. From a specimen in the British Museum.

which is closely allied to the last, but with even more complex antlers and some differences in coloration; (5) the Greenland reindeer (*R. tarandus grænlændicus*), which is apparently very similar to the sixth variety; and (6) the barren-ground reindeer (*R. tarandus arcticus*), from the open country north of the forests in America, a very distinct

animal, characterised by its small bodily size, and the great length and simple form of the antlers, in which, except on the brow tine, there is scarcely any palmation. Reindeer heads are probably some of the most difficult to measure, owing to the different curves the top points frequently present. Females have smaller and lighter antlers than males.

Head of Male Newfoundland Reindeer. From Dr. J. A. Allen.

Abel Chapman, writing in the *Field*, says two or three year old bucks run between 16 and 20 stone; but one big stag he shot was made out (perhaps erroneously) to scale well over 30 stone, clean. The measurements of the antlers have been separated for the convenience of sportsmen.

REINDEER or CARIBOU (*Rangifer tarandus*)—continued.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
62	5½	39	49½	20 + 17	Canada . . .	Mrs. Macintosh.
57½	5½	13½	...	13 + 7	Arctic Region . .	British Museum.
57½	5½	33½	44½ (outside)	20 + 16	Do. . .	Sylvester Browne.
54½	4½	20½	...	11 + 13	N. America . .	The late Captain Sir John Franklin, British Museum.
-54	6½	21½	32½	12 + 11	?	Paris Museum.
52½	5½	15	26½	17 + 12	N. Canada . .	J. Talbot Clifton.
52	4½	28½	38	7 + 7	Do. . .	David T. Hanbury.
151½	4½	40½	48½	17 + 14	Hudson Bay . .	Sir Edmund G. Loder, Bart.
49	4½	24½	32½	7 + 9	N. America . .	Hon. Walter Rothschild.
248	6½	11½	25½	17 + 15	Newfoundland . .	Sir Edmund G. Loder, Bart.
47½	5½	32½	...	19 + 12	N. America . .	A. Murray, British Museum.
46½	6½	16½	28	32	British Columbia .	J. Turner-Turner.
45½	5½	31½	33½	13 + 12	Newfoundland . .	F. C. Williamson.
45½	4½	19½	31	15 + 13	N. Canada . .	David T. Hanbury.
44½	5½	34	37	...	Newfoundland . .	C. H. Akroyd.
44	5½	18½	30	18 + 13	Do. . .	Vice - Admiral Sir William Kennedy.
44	5½	19	26½	17 + 14	Do. . .	Lieut. A. E. Allgood, R.N.
43½	5½	40	41½	16 + 11	Do. . .	St. George Littledale.
-42½	7½	33½	38½	22 + 18	Do. . .	R. Gordon Smith.
-42½	...	...	49½ (outside)	24	Do. . .	General R. L. Dashwood.
42	6½	...	18½	33	Alaska . .	Earl of Lonsdale.
42	5½	36½	39½	20 + 12	Newfoundland . .	Q. C. Colmore.
41	5½	20½	28	15 + 9	Do. . .	Lieut.-Col. Hon. W. Coke.
41	6	35	33	20	British Columbia .	Major C. C. Ellis.
40	6	31½	35½	19 + 14	Newfoundland . .	Vice - Admiral Sir William Kennedy.
39	5½	...	23½	17 + 14	Do. . .	Sir Victor Brooke's Collection.
39	6	31	30½	15 + 10	Do. . .	Captain C. E. Stracey.
39	7	28	31	20 + 19	Do. . .	Vice - Admiral Sir William Kennedy.

¹ Woodland Caribou.

² Barren-ground.

REINDEER or CARIBOU (*Rangifer tarandus*)—*continued*.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
39	7	29	31½	18 + 16	?	Duke of Westminster.
39	5½	...	...	11 + 11	British Columbia	Sir Peter Walker, Bart.
39	4½	26	26½	15 + 15	Newfoundland	D. F. Moir, R.N.
-39	7½	33	31½	29 + 22	Do.	Lord Thurlow.
38	5½	19½	21½	17 + 14	British Columbia	T. P. Kempson.
38	6	36	35½	39	Newfoundland	Lieut. F. C. Osborne, R.N.
37½	6½	23	23	11 + 10	British Columbia	W. S. Power.
37½	5½	12	20	14 + 12	Canada	J. W. Osborne.
37½	5½	...	29	...	?	Otho Shaw.
37½	5½	...	24	27	Newfoundland	Dr. Wm. Tait.
37	5½	21½	25	12 + 12	British Columbia	H. G. Walker.
-37	...	...	40 (outside)	43	Newfoundland	General R. L. Dashwood.
37	4½	14½	25	15 + 13	Do.	Captain H. H. Grenfell, R.N.
36½	5½	28	25	8'9	British Columbia	H. G. Walker.
36½	5½	19	22	10 + 9	Newfoundland	V. L. A. Campbell, R.N.
36½	6½	30	31½	19 + 18	Do.	A. Wilson, R.N.
36½	6½	26½	28½	17 + 15	British Columbia	Sir Peter Walker, Bart.
36	5½	44	...	15 + 12	Do.	J. V. Colby.
36	5	23	27½	12 + 11	Do.	Captain F. Molyneux.
35½	6½	18½	29½	13 + 11	New Brunswick	P. N. Graham.
35½	5½	32½	34½	12 + 10	Newfoundland	G. C. W. Crispin, R.N.
33½	5½	23	26	15 + 11	British Columbia	Sir Peter Walker, Bart.
-32½	8½	12½	18	17 + 10	Canada	James J. Harrison.
32½	5½	32½	...	12 + 12	?	Major R. Hallowes.
-32	5½	...	...	14	British Columbia	Theodore Roosevelt.

REINDEER or CARIBOU (*Rangifer tarandus*)—*continued*.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ 60	5½	38½	41½	22 + 15	?	Sir V. Brooke's Collection.
-59½	7	38	44	15 + 16	Norway . . .	J. Whitaker.
-59	4½	42½	46 (outside)	7 + 5	Do. . . .	H. J. Elwes.
-58	6	30½	37	33	Jotunheim, Norway.	S. Ratcliff.
-55½	6½	38	43½	18 + 8	Sundal Fjelds, Nor- way	Capt. Gerard Ferrand.
54½	4½	33½	40½	15 + 13	Norway . . .	J. H. Thomas.
54	5	22	41½	16 + 11	Do. . . .	Kenneth M'Douall.
-51	6½	...	...	...	Rundane, Norway .	Capt. John Marriott.
-51	5½	29	...	25	Norway . . .	Abel Chapman.
50½	4½	24	29 (outside)	16 + 13	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
-49½	4½	20½	34½	13 + 12	Norway . . .	H. J. Elwes.
49	4½	25	36½	18 + 15	Do. . . .	J. H. Barnard.
9 47	4½	23	29	17 + 9	Do. . . .	Kenneth M'Douall.
46½	6	21½	26½	37	Do. . . .	Hon. Walter Rothschild.
-46	5	29	38	42	Jotunheim, Norway.	S. Ratcliff.
44	4½	20½	32½	12 + 9	Norway . . .	Col. C. B. Harvey.
-42	6	26	40½	22 + 13	Do. . . .	R. Rankin.
41½	4½	...	24½	12 + 9	Spitzbergen . .	W. D. James.
41	4½	26½	30½	12 + 12	Do. . . .	Sir W. Martin Conway.
-40½	4½	29	30	11 + 8	Norway . . .	Lewis J. Cadell.
38½	4	25½	...	7 + 5	Do. . . .	British Museum.
38	5½	21½	...	15 + 13	Do. . . .	Do.
37	4½	18	20½	15 + 11	E. Spitzbergen .	Arnold Pike.
36	4½	24	26	17 + 11	Do. . . .	Do.
-36	6½	34	33½	23 + 20	Lapland . . .	Dublin Museum.
² -34½	6½	31	...	33	Norway . . .	Abel Chapman.
-31	5½	23	20	19 + 18	Do. . . .	J. Benett-Stanford.

¹ Perished antlers.² A very old buck.

Skull and Antlers of Male Elk.

From an Alaskan specimen in the possession of the Duke of Westminster.

ELK or MOOSE (*Alces machlis*).

The largest member of the deer tribe, distinguished by its ungainly form, long limbs, broad, produced, and flabby muzzle (all of which, except a small triangular patch below the nostrils, is covered with hair), the presence of a pendulous hairy organ (the so-called "bell") on the throat of the males, and the form and position of the antlers in that sex. These latter are set on the skull with their bases at right angles to the middle line of the face, the beams having neither brow nor bez tines, but expanding after a short distance into a broad palmation, carrying a number of snags on the outer border; in young elk each antler is divided in a fork-like manner into a small front and a larger hind portion. The main hoofs are long and pointed, and the lateral pair large: there is a gland and tuft of hair both on the hock and hind cannon-bone, the latter being situated high up. The tail is very short. From birth to old age elk are uniformly coloured; the general tint of the hair, which is long, coarse, and somewhat brittle, varying

from yellowish gray to deep blackish brown, and being usually darker in American than in European examples. The height varies from 5 feet 9 inches at the shoulder in Scandinavian examples (Sir H. Pottinger) to as much as 6 feet 6 inches in American specimens (General R. L. Dashwood); the weight from 900 to 1400 lbs., that of the antlers being about 60 lbs.

Elk inhabit the forests and marshy districts of Scandinavia, Eastern Russia, Siberia, Northern Russia, and thence eastwards through Siberia



Antlers of Male Elk.

north of about latitude 50° N. to Amurland; while in America (where they are invariably known as moose) at the present time they are found in Alaska, Montana, Nova Scotia, and New Brunswick. Although many sportsmen say they can be distinguished by the antlers and the colour of the skin, the European and American elk appear so similar that they do not seem worthy of being regarded as even distinct local varieties, but for convenience in comparing the European and American measurements are separated.

An elk killed at Meswicz, Lithuania, by Count Scheibler measured

	Feet.	Inches.
Length tip of nose to tip of tail . . .	9	$\frac{1}{2}$
" " " " root . . .	8	6

RECORDS OF BIG GAME

	Feet.	Inches.
Crest to nose	2	7
Height at withers	5	9
" " quarters	6	5 $\frac{1}{2}$
Girth quarters		19 $\frac{3}{4}$
Round thigh		7 $\frac{1}{2}$
Below knee	3	6 $\frac{1}{2}$
Round neck near the ears	4	9
Estimated weight 1500 lbs. See antlers, 27 $\frac{1}{2}$, etc.		

Length to longest tine.	Circumference above burr.	Tip to Tip.	Greatest width.	Breadth of Palm.	Points.	Locality.	Owner.
1-55 $\frac{1}{2}$	7 $\frac{1}{2}$	...	70 $\frac{1}{2}$	29 ?	...	Alaska . . .	W. W. Hart.
-55	11 ?	37	69	21	21	Do. . . .	F. B. Tolhurst.
-49	...	...	78 $\frac{1}{2}$	18	40	Yukon . . .	W. F. Sheard.
2-48	10	...	69	15	32	Do. . . .	Dall De Weese.
-47 $\frac{1}{2}$	9 $\frac{1}{2}$	37 $\frac{1}{2}$	72	16 $\frac{1}{2}$	20 + 17	Do. . . .	Duke of Westminster.
44 $\frac{1}{2}$	10 $\frac{3}{8}$	49 $\frac{1}{2}$	66	14	17 + 14	Kenai Mts. .	Viscount Powerscourt.
-44	...	...	61 $\frac{1}{2}$	...	...	Canada . . .	General R. L. Dashwood.
43 $\frac{1}{2}$	8 $\frac{1}{2}$	40	59 $\frac{1}{2}$	14 $\frac{1}{2}$	14 + 13	Manitoba . .	G. H. M. Banks.
43	9 $\frac{1}{2}$	22 $\frac{1}{2}$	47 $\frac{1}{2}$	12	11 + 11	Canada . . .	Viscount Powerscourt.
-42 $\frac{3}{4}$	10	35 $\frac{3}{4}$	56	13 $\frac{1}{2}$	12 + 11	N. America .	T. W. Wood, Jun.
-41	8 $\frac{1}{2}$	...	...	21 $\frac{3}{4}$	27	Chesincook, M.E.	Col. Hoselton.
-41	...	...	54 $\frac{1}{2}$	...	12 + 11	Canada . . .	General R. L. Dashwood.
-41	...	...	65	24	14 + 13	Manitoba . .	Otho Shaw.
40	8	38	60	13	11 + 10	Canada . . .	Viscount Powerscourt.
40	8	35	55 $\frac{1}{2}$	13	12 + 11	Maine . . .	J. S. Braithwaite.
39 $\frac{7}{8}$	6 $\frac{1}{2}$	...	51 $\frac{3}{8}$	15 $\frac{1}{4}$	13 + 12	N. America .	British Museum.
-39 $\frac{1}{2}$	8 $\frac{1}{2}$	...	39 $\frac{1}{2}$	13 $\frac{3}{4}$	...	Do. . . .	Otho Shaw.
39 $\frac{1}{2}$	7	38	54 $\frac{1}{2}$	16	13 + 12	Canada . . .	Sylvester Browne.
39 $\frac{1}{2}$	7 $\frac{3}{4}$	37	56 $\frac{1}{2}$	13 $\frac{1}{2}$	14 + 11	British Columbia	Sir Peter Walker, Bart.
39 $\frac{1}{2}$	7 $\frac{5}{8}$	33 $\frac{1}{2}$	49 $\frac{1}{8}$	11 $\frac{1}{2}$	12 + 10	N. America .	J. Carr Saunders.
39 $\frac{1}{8}$	7 $\frac{5}{8}$	36 $\frac{1}{2}$	51 $\frac{3}{4}$	9 $\frac{1}{2}$	8 + 7	E. slopes of the Rockies	J. C. L. Knight-Bruce.
39	8 $\frac{1}{2}$	38 $\frac{1}{2}$	57	12 $\frac{1}{2}$	15 + 12	N. America .	Sir Edmund G. Loder, Bt.

¹ Height at shoulder, 8 ft. 2 in. ?; skull horns, 68 lbs.; estimated weight, 2600 lbs.

² Height at shoulder stated to be 7 ft. 8 in. ?

ELK or MOOSE (*Alces machlis*)—continued.

Length to longest tine.	Circumference above burr.	Tip to Tip.	Greatest width.	Breadth of Palm.	Points.	Locality.	Owner.
38½	7	...	52½	10½	11 + 10	N. America .	British Museum.
...	...	...	67	...	23	Yukon . .	J. H. Whitehouse.
-38½	9½	44	66	14	28	New Brunswick	S. Decatur.
38½	6½	34	49½	9½	9 + 9	N. America .	Sir Victor Brooke's Collection.
38	7½	30½	47	12	12 + 12	British Columbia	Sir Peter Walker, Bart.
38	6½	...	59½	9½	11 + 11	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
38	8	21½	57½	14	18 + 15	Manitoba . .	C. H. Akroyd.
-38	11	50	61	14	26	New Brunswick	J. Bodkin.
-37½	8	...	51½	11½	14 + 13	Canada . .	F. Ashby.
37½	8½	...	49½	11	21	?	Ernest Farquhar.
37½	7½	35	50½	11½	13 + 10	New Brunswick	Hon. Charles Ellis.
-35½	7½	33½	47½	11	12 + 11	Canada . .	James J. Harrison.
-35½	8½	...	42½	...	10 + 9	Do. . .	Paris Museum.
34½	8	39½	49½	10½	9 + 9	New Brunswick	P. N. Graham.
34½	6½	42	51½	9½	10 + 9	Canada . .	G. Marchetti.
-33½	7	28	44	11	13 + 13	N. America .	Dublin Museum.
33	6	30	44	10	10 + 10	Manitoba . .	Major C. S. Cumberland.
32½	7	29½	44	8	11 + 9	N. America .	Charles Makin.
-31½	7	...	...	...	14	Do. . .	A. Rogers.
31½	...	...	51½	12½	...	?	Earl of Lonsdale.
-30	5½	...	40½	13	22	Montana . .	Theodore Roosevelt.
28½	7½	35	49½	12½	11 + 11	New Brunswick	Hon. Charles Ellis.
27	5½	28	42	6½	6 + 7	Eastern slopes of the Rockies	Hon. F. Thellusson.
26½	6½	30	40	6	6 + 6	N. of Manitoba	P. B. Vander-Byl.

ELK or MOOSE (*Alces machlis*)—*continued*.

Antlers of Male Elk.

Length to longest tine.	Circumference above burr.	Tip to Tip.	Greatest width.	Breadth of Palm.	Points.	Locality	Owner.
37½	8	35½	57½	11½	11 + 13	Norway . .	Thomas Bate.
33	8½	36½	51½	15½	10 + 10	Do. . .	Capt. Gerard Ferrand.
-33	9	34	35	...	9 + 10	E. Prussia . .	H. R. H. the Duke of Saxe-Coburg and Gotha.
32½	7½	33	46	11½	10 + 10	Sweden . .	Capt. Gerard Ferrand.
32	6	..	43½	9½	7 + 8	Russia . .	Sir Edward Caley, British Museum.
32	8½	37½	48	11½	10 + 9	Nr. St. Petersburg	Prince Demidoff.
-32	7	..	52	9	9 + 9	Norway . .	} H. J. Elwes.
...	7	35	42½		9 + 7	Do. . .	
-31	7	28	45	.	17	Do. . .	S. Ratcliff.
¹ 30½	6½	43	46	10½	15	Do. . .	Abel Chapman.
30½	8	27	40½	9½	10 + 7	Do. . .	Lieut.-Col. G. D. F. Sullivan.
30½	7½	29½	44½	10	9 + 8	Do. . .	Sir Victor Brooke's Collection.
29	6	30½	42½	7½	11 + 9	Do. . .	Sir H. Pottinger, Bart.
29	6½	31½	39½	6½	10 + 9	Do. . .	Do.
29	7½	...	43½	10½	24	Do. . .	Sir Peter Walker, Bart.
28½	7½	24½	42	9½	10 + 9	Do. . .	Sir H. Pottinger, Bart.

¹ Estimated weight, 90 stone.

ELK or MOOSE (*Alces machlis*)—*continued*.

Length to longest tine.	Circumference above burr.	Tip to Tip.	Greatest Width.	Breadth of Palm.	Points.	Locality.	Owner.
-28½	6	33½	43½	11	12 + 10	Lithuania .	Prince Radziwill.
28	6½	32	47	9	8 + 8	Norway . .	Sir H. Pottinger, Bart.
28	7½	31½	38	10	12 + 10	Sweden . .	Viscount Powerscourt.
-27½	7	25½	33	8½	5 + 5	Lithuania .	Count Scheibler.
-27	6½	30	39	...	20	Norway . .	S. Ratcliff.
27	6½	40	43½	...	8 + 7	Do. . .	J. H. Barnard.
27	6½	20½	38	9	8 + 6	Nr. St. Petersburg Norway . .	Prince Demidoff.
-26½	8½	28½	41½	9½	8 + 8	Norway . .	Sir H. Pottinger, Bart.
26½	6½	25	38	6	9 + 7	Russia . .	Lieut.-Col. Hon. W. Coke.
26½	6½	...	39½	6½	5 + 4	S. Russia .	British Museum.
26	6	27½	42½	7	7 + 6	Norway . .	Lord Delamere.
26	6½	29	37	5	6 + 5	Do. . .	Sir H. Pottinger, Bart.
23½	5½	...	35½	5	5 + 3	Do. . .	E. N. Buxton.
23	6	27½	36	6	7 + 6	Sweden . .	Sir H. Pottinger, Bart.



Antlers of Caspian Red Deer. From a Hungarian specimen in the collection of Viscount Powerscourt. Counting from the skull upwards, the first tine is the brow, the second the bez, and the third the trez, above which come the surroyals, or crown. The main shaft is termed the beam.

RED DEER (*Cervus elaphus*).

The red deer of Western Europe is the typical representative of the genus *Cervus*, in which the antlers of the males are set on the skull at an oblique angle to the middle line of the forehead, and always have a brow tine, while they are generally more or less nearly cylindrical, although sometimes palmated. There is always a large bare portion on the muzzle, the face is long, the ears are generally large, and the tail is comparatively short, often extremely so. Although there is almost always a gland and tuft on the hind cannon-bone, usually situated high up, there is none on the hock itself. The coat may be spotted.

In the red deer the antlers are subcylindrical and complex, generally with a bez tine, and always with a trez, the number of points exceeding five, and the crown frequently forming a cup. The tail is relatively long and pointed, and there is a distinct light-coloured patch on the buttocks, which includes the tail; the general colour of the adult summer coat being reddish brown, and that of the winter dress grayish brown, while the young are profusely spotted.

Red deer, in the widest sense of the term, are inhabitants of Europe, North Africa, Asia Minor, and Northern Persia. In the typical red deer (*C. elaphus typicus*) of Western, Northern, and Central Europe, the antlers attain their maximum degree of complexity, sometimes having twenty or even more points, although, in many Scotch examples the bez tine is wanting. In a park red deer killed at Spetchley Park the weight was 419 lbs. gross, and 216 when cleaned; while in one shot at Knowsley many years ago the clean weight was no less than 424 lbs. The height at the shoulder now reaches about 4 feet. H.R.H. the Duke of Braganza saw a continental stag shot which scaled 41 stone 10 lbs. two years ago, and last year H.R.H. shot a 10-pointer with a spread of 55 inches.

The Corsican red deer (*C. elaphus corsicanus*), of Corsica and Sardinia, is a very small race, with the bez tine of the antlers wanting, and the general colour of the upper parts dark brown in summer and blackish in winter. Nearly allied is the North African red deer (*C. elaphus barbarus*), which is of rather larger dimensions, with a grayish-brown streak down the middle of the back, and small irregular whitish spots on the flanks and sometimes on the back; traces of such spots being occasionally observable in the summer coat of does of the typical race. The bez tine seems to be very generally wanting.

The Caspian red deer (*C. elaphus maral*) is a large variety, described on page 33.

Lord Tweedmouth furnishes the following dimensions of his fine Scotch stag:—

Widest span over all, $39\frac{1}{4}$ inches; span inside below cups, 34 inches; span outside below cups, 37 inches.

Right antler.—Length, 39 inches; length of brow, $10\frac{1}{4}$ inches; of bez, 10 inches; of trez, 13 inches. Length of tines in cup, 10, 7, $4\frac{1}{4}$ inches. Circumference at coronet, $8\frac{1}{2}$ inches; between bez and trez, $7\frac{1}{4}$ inches; above trez, 6 inches.

Left antler.—Length, 38 inches; of brow, 10 inches; of bez, 8 inches; of trez, 11 inches. Length of tines in cup, 8, 6, and 4 inches. Circumference at coronet, 9 inches; between bez and trez, $7\frac{1}{2}$ inches; above tray, $6\frac{1}{4}$ inches.

Shot, October 9, 1880. Weight, 21 stone 9 lbs.; clean, but stag was much run.

From a photograph by Wray.

Antlers of Red Deer killed by Lord Burton, with fully developed cups.

a.—SCOTCH RED DEER.

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight. st. lbs.	Locality.	Owner.
-41	7	22½	35	.	7+7		Inverness (1794)	W. H. Walker.
¹ -40	6	.	30		10	14.7	Glentilt	Duke of Atholl.
-39	7½	...	34	39½	6+6	21.9	Guisachan	Lord Tweedmouth.
-37½	..	20½	26½	..	7+7	...	?	Sir Humphrey de Trafford, Bart.
37½	5½	14½	26½	.	6+7	.	?	H. R. H. the Duke of Saxe- Coburg and Gotha.
37½	5	14½	24½	...	6+5	..	?	Do.
¹ -36½	...	..	35	12	...		Glenmoriston	Col. W. Gordon-Cumming.
36½	5	34	39½	41	5+6	.	Glenstrath- farrar	Viscount Powerscourt (shot by the late Roualeyn Gordon-Cumming).
36½	6½	31½	32½		6+6	.	?	Sir Humphrey de Trafford, Bart.
36½	7	22½	28	.	7+7	..	?	Do.
-36	..	...	36	42	13	.	Monymusk (1795)	The late Capt. Johnstone Grant.
36	5½	16½	28	36	7+7	...	?	Duke of Portland.

¹ Recorded by J. G. Millais.

SCOTCH RED DEER—continued.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight. st. lbs.	Locality.	Owner.
36	4 $\frac{1}{2}$	21 $\frac{1}{2}$	27	...	6+6	...	Caenlochan	Henry Tate.
35 $\frac{1}{2}$	4 $\frac{3}{4}$	27 $\frac{1}{2}$	34	36 $\frac{3}{8}$	4+3	...	Do.	Do.
35 $\frac{1}{2}$	5 $\frac{1}{2}$	...	25 $\frac{1}{2}$	...	6+6	17 6	Sutherland	Abel Chapman.
35 $\frac{1}{2}$	6	...	...	29	12	19	Auchnashel- lach	The late Lord Alexander Paget.
35 $\frac{1}{2}$	4 $\frac{1}{2}$	17 $\frac{1}{2}$	30	...	5+6	17 6	Glenisla, For- farshire	Viscount Powerscourt.
-35 $\frac{1}{2}$	7	...	26 $\frac{1}{2}$	...	20	...	Glenquoich	Lord Burton. (See illus- tration.)
35 $\frac{1}{2}$	4 $\frac{3}{4}$	27 $\frac{1}{2}$	34	36 $\frac{3}{8}$	4+3	...	Caenlochan	Henry Tate.
-35 $\frac{1}{2}$	4 $\frac{7}{8}$	31 $\frac{1}{8}$	30	...	6+6	...	Deanich, Ross- shire	G. Percy V. Aylmer.
35	4 $\frac{3}{4}$	22	28	...	7+6	...	Talladh-a-Bhe- ithe, Rannoch	E. Weller-Poley.
-35	...	...	...	34	10	16 1	N. Morar	Capt. T. W. Gill.
-35	...	...	29	41 $\frac{1}{2}$	7+6	...	?	Sir Arthur Grant, Bart.
¹ -35	5 $\frac{3}{4}$	26	33 $\frac{1}{2}$	37 $\frac{1}{2}$	12	...	Guisachan	Lord Tweedmouth.
² -35	4 $\frac{1}{2}$	...	...	27 $\frac{1}{2}$	8	...	Cairn Thomais Gaick	John Hargreave.
-34 $\frac{3}{4}$	...	...	...	31 $\frac{1}{2}$	3+2	16 12	Cluanie	Hon. T. A. Brassey.
34 $\frac{1}{2}$	5 $\frac{1}{2}$	37 $\frac{1}{2}$	34 $\frac{1}{2}$	...	12	...	Braemore	Sir John Fowler, Bart.
34 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	27	...	6+5	...	N. Morar	J. R. Hutchison.
² -34 $\frac{1}{2}$	5	...	...	34 $\frac{1}{2}$	12	16 7 (clean)	Glentilt	Duke of Atholl.
34 $\frac{1}{2}$	6	17 $\frac{3}{4}$	25	31 $\frac{1}{2}$	5+4	15 12	Caenlochan	Mrs. Henry Tate.
34 $\frac{1}{2}$	4 $\frac{1}{8}$	16 $\frac{1}{4}$	24 $\frac{3}{8}$	...	5+5	...	Auchnasheen	F. Devas.
-34	5 $\frac{1}{2}$	...	...	30	Switch	...	Letterewe	Hon. T. A. Brassey.
34	4 $\frac{1}{8}$	17 $\frac{1}{4}$	26 $\frac{3}{4}$	29	5+4	...	Caenlochan	W. A. L. Fletcher.
34	...	...	30	...	11	17 2	N. Morar	Capt. T. W. Gill.
34	4	28 $\frac{1}{2}$	30 $\frac{3}{4}$	...	5+4	...	Glenmuick	J. Ponsonby.
34	4 $\frac{1}{2}$	12	23 $\frac{1}{2}$	...	5+4	...	?	C. A. Grenfell.
34	4	16 $\frac{3}{8}$	...	...	5+4	...	Blair-Atholl	Captain A. W. E. Count Gleichen.
-34	4 $\frac{3}{8}$	19	28	...	6+5	...	Rothiemurchus, Inverness	A. Basil Brooke.
² -34	...	...	...	...	11	...	Braemar	Col. Gordon-Cumming.
² -34	4 $\frac{3}{4}$	...	...	36 $\frac{1}{2}$	12	...	Glenbruar, Perthshire	Sir W. Ogilvie Dalgleish.

¹ Above trez.² Recorded by J. G. Millais.

C

SCOTCH RED DEER—*continued.*

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight. st. lbs.	Locality.	Owner.
² -34	4 $\frac{7}{8}$	...	...	30	10	...	Morar .	W. Stirling.
² 34	7	...	...	26	14	...	Glenartney .	Earl of Ancaster.
33 $\frac{3}{4}$	5 $\frac{1}{2}$	19 $\frac{1}{2}$	25 $\frac{1}{2}$	...	5+5	...	?	H. S. O'Brien.
-33 $\frac{1}{2}$	5	...	34 $\frac{1}{2}$	...	5+5	20	Dalness .	J. G. Millais.
33 $\frac{1}{2}$	4	16 $\frac{1}{2}$	25	29	5+5	...	Caenlochan .	H. C. Pilkington.
-30 $\frac{1}{2}$	4 $\frac{1}{2}$	...	27	...	12	...	Kintail .	Sir Edmund G. Loder, Bart.
33	4 $\frac{1}{8}$	8 $\frac{1}{8}$	20 $\frac{3}{4}$	24 $\frac{3}{4}$	4+4	...	Ben Alder .	Julius Wernher.
33	4 $\frac{1}{4}$	24 $\frac{3}{4}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	5+4	15 12	Do.	F. C. Selous.
33	4 $\frac{3}{4}$	21 $\frac{1}{2}$	28 $\frac{3}{4}$	33	4+4	...	Kintail .	R. P. Page.
-32 $\frac{3}{4}$	5	25 $\frac{3}{4}$	29 $\frac{1}{2}$	...	6+6	...	Ardverikie .	W. H. Walker.
32 $\frac{3}{4}$	4 $\frac{1}{2}$	...	28	...	5+4	...	?	Sir Charles Tennant, Bart.
32 $\frac{1}{2}$	4 $\frac{1}{4}$	16 $\frac{1}{2}$	26 $\frac{1}{4}$	...	5+5	...	Auchnashel- lach	G. Webster.
32 $\frac{1}{2}$	4 $\frac{3}{4}$	20 $\frac{3}{4}$	28	...	5+5	...	Morar .	J. R. Hutchison.
32	4	25 $\frac{3}{4}$	25	28	5+5	...	Invercauld .	Otto Beit.
32	5	...	22 $\frac{1}{2}$	...	5+4	19	Rannoch .	Sir W. G. Pearce, Bart.
¹ 32	4 $\frac{1}{2}$	31	29 $\frac{1}{2}$	40	7+9	...	Rhidorrach .	Viscount Powerscourt.
32	4	24 $\frac{1}{2}$	29	...	4+4	...	Braulen .	J. K. Fowler.
-32	...	...	...	34	10	...	Kintail .	Sir Edmund G. Loder, Bart.
31 $\frac{3}{4}$	3 $\frac{3}{4}$	...	26 $\frac{1}{2}$	...	4+4	...	Rhidorrach .	Captain F. Cookson.
31 $\frac{3}{4}$	4 $\frac{3}{4}$	18	24 $\frac{3}{4}$	...	6+5	14	Inchgrundle .	Countess of Dudley.
31 $\frac{1}{2}$	4 $\frac{1}{2}$	16	21	23 $\frac{1}{2}$	6+5	...	Shank .	R. K. Micklethwait.
31 $\frac{1}{2}$	4 $\frac{3}{4}$	22	28 $\frac{1}{4}$	31 $\frac{1}{2}$	3+3	...	Caenlochan .	E. L. Fletcher.
31 $\frac{1}{2}$	4	12 $\frac{1}{2}$	21 $\frac{1}{2}$	25 $\frac{1}{4}$	6+4	...	Do.	W. W. Gossage.
31 $\frac{1}{2}$	5	...	26 $\frac{1}{2}$	...	12	17	Auchnasheen	J. F. Laycock.
31 $\frac{1}{2}$	4	22	26 $\frac{1}{2}$	32 $\frac{1}{2}$	7+6	...	Kintail .	R. P. Page.
31 $\frac{1}{2}$	4	24 $\frac{1}{2}$	29	...	5+4	...	Braulen .	J. Talbot Clifton.
31 $\frac{1}{2}$	4 $\frac{1}{4}$	21	25 $\frac{1}{2}$	...	4+4	15 3	Invermark .	W. S. M. Burns.
31 $\frac{1}{2}$	4 $\frac{3}{8}$	20 $\frac{1}{4}$	25 $\frac{3}{4}$	...	3+3	...	Dalnacardoch	Hon. T. A. Brassey.

Above trez.

² Recorded by J. G. Millais.

SCOTCH RED DEER—continued.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight. st. lbs.	Locality.	Owner.
31 $\frac{3}{8}$	4 $\frac{3}{8}$	8 $\frac{3}{8}$	24	...	5+5	...	Glenmuick	C. Lawrence.
-31 $\frac{1}{4}$	5 $\frac{1}{2}$	25 $\frac{1}{2}$	29	...	Switch	...	Achdalen	M. K. North.
31 $\frac{1}{4}$	4 $\frac{1}{8}$	16	24 $\frac{1}{8}$	...	7+5	...	Rhidorrach	Capt. F. Cookson.
31 $\frac{1}{4}$	4 $\frac{1}{8}$	24 $\frac{7}{8}$	32	...	5+3	...	Ross-shire	E. Lort-Phillips.
31 $\frac{1}{4}$	4	...	40 $\frac{1}{4}$	...	6+6	...	?	Dr. Fancourt Barnes.
31 $\frac{1}{4}$	4	15	25	...	5+4	...	Auchnashel- lach	W. Maxwell Lyte.
31	4 $\frac{3}{8}$	24	25	...	5+5	...	Morar	J. R. Hutchison.
-31	5 $\frac{1}{2}$	32 $\frac{1}{2}$	...	38	5+4	...	Inverlochry	Mrs. J. E. Platt.
-31	5 $\frac{1}{2}$	20 $\frac{1}{2}$	24	...	10	...	?	C. V. A. Peel.
31	4 $\frac{3}{8}$	19 $\frac{1}{4}$	23 $\frac{1}{4}$	33 $\frac{1}{4}$	8+6	...	S. Harris	Earl of Dunmore.
31	4 $\frac{3}{8}$	24 $\frac{1}{2}$	28 $\frac{1}{4}$	...	5+4	...	Caenlochan	F. W. Robinson.
-31	4 $\frac{1}{2}$	20	15	...	8+7	...	?	J. Benett-Stanford.
31	4 $\frac{1}{2}$	16 $\frac{1}{2}$	23 $\frac{1}{2}$	29	6+5	...	Inversanda	J. Hamilton Leigh.
30 $\frac{7}{8}$	4 $\frac{3}{8}$	25 $\frac{7}{8}$	28 $\frac{3}{8}$	...	5+6	...	Rhidorrach	W. R. Cookson.
30 $\frac{3}{4}$	5	19 $\frac{1}{2}$	24	...	6+5	...	Arisaig	J. R. Hutchison.
30 $\frac{3}{4}$	4 $\frac{1}{2}$	13	23 $\frac{1}{4}$	...	5+4	14	Invergarry	Guy Stephenson.
30 $\frac{1}{2}$	3 $\frac{7}{8}$	24 $\frac{3}{4}$	31	33 $\frac{1}{4}$	3+3	...	Inversanda	J. Hamilton Leigh.
30 $\frac{1}{2}$	4 $\frac{1}{8}$	13 $\frac{1}{2}$	23 $\frac{1}{2}$	...	6+6	...	Letterewe	Gordon Wood.
30 $\frac{1}{2}$	4 $\frac{1}{4}$	17 $\frac{1}{4}$	24 $\frac{3}{4}$	...	7+6	...	Rhidorrach	J. Talbot Clifton.
30 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	24	...	4+3	14	Glen Tana	Major Hon. A. H. Henniker.
30 $\frac{1}{2}$	4	25 $\frac{1}{2}$	28 $\frac{3}{4}$	...	4+3	...	Auchnashel- lach	Capt. H. Reynolds, R.N.
30 $\frac{1}{2}$	4 $\frac{1}{4}$	22 $\frac{1}{4}$	29	31	3+3	...	?	L. Breitmeyer.
30 $\frac{1}{4}$	4 $\frac{3}{8}$	20	25 $\frac{1}{2}$	...	6+5	...	?	H.R.H. le Duc d'Orléans.
-30	4 $\frac{3}{8}$	...	25 $\frac{1}{2}$	...	5+5	15	Blackmount	J. G. Millais.
-29 $\frac{3}{4}$	4	32 $\frac{1}{2}$	...	...	5+5	16 2	Do.	Do.
29 $\frac{1}{2}$	4 $\frac{1}{2}$	24 $\frac{3}{4}$	29	...	4+5	...	?	Marquis Camden.
-29 $\frac{1}{4}$	6 $\frac{1}{2}$	...	27 $\frac{7}{8}$	...	...	16 11	Blackmount	Marquis of Breadalbane.
-29	4	...	29	31	6+6	...	Inverness	H. Seton-Karr.

The widths of the six widest heads in the Duke of Fife's collection are as follows:—

40 38 37 35 35 35

The six longest antlers of this celebrated collection are respectively—

37 36 35½ 35½ 35 35

The antlers of one of the red deer in Mr. Lucas's Park at Warnham Court, Sussex, in 1889, had 34 points; 1890, 34 points; 1891, 37 points; 1891, 47 points and weighed 17 lbs.; 1893, 45 points, 16½ lbs.

For an interesting account of many fine specimens the reader is referred to *British Deer and their Horns*, by J. G. Millais.

b.—IRISH RED DEER.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Weight. st. lbs.	Locality.	Owner.
1-42½	...	...	...	12	22 7	Colebrooke . .	Sir Douglas Brooke, Bart.
-41	6	17½	23	10+9	23 3	Do. . .	Do.
-40	5½	28	29½	8+8	25 5	Do. . .	Do.
39½	5½	14½	26½	7+7	26 11	Do. . .	Do.
38	5½	20	30½	10+8	25 0 (clean)	Do. . .	Do.
35	4½	...	30	9	...	Ireland . .	Hon. A. Charteris.
35	5½	19½	26½	6+5	20 2	Powerscourt Park	Viscount Powerscourt.
35	5½	21½	29	5+5	24 st. as he fell 18 st. clean	Do. . .	Do.
34½	5	12½	22½	5+5	24 st. as he fell 18 st. clean	Do. . .	Do.
34	4½	25½	28½	6+6	26 st. as he fell 20 st. clean	Do. . .	Do.
34	5	20½	26	6+6	20 st. clean	Do. . .	Do.
34	4½	...	31½	6+5	26 8	Muckcross . .	Ralph Sneyd.
34	4½	13½	25	5+5	...	Colebrooke . .	Capt. J. M. Rogers.
33½	5	...	26	5+5	22 0	Muckcross . .	Hon. Mrs. Bourke.
31	4½	11	20½	7+7	...	Do. . .	Ralph Sneyd.
-31	4½	18½	22	5+7	...	?	Dublin Museum.
30½	4	...	26½	5+5	19 10	Muckcross . .	Geoffrey Carr-Glyn.
29½	4½	21½	24½	6+6	...	Colebrooke . .	Montrose Cloete.

¹ See Millais's *British Deer and their Horns*.



Antlers of Exmoor Stag.

c.—WEST OF ENGLAND RED DEER.

Length on outside curve.	Circumference between bezel and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
41	5½	21½	32½	5+5	Exmoor . . .	{ Sir John Heathcoat-Amory, Bart. ; killed in 1897 with the Devon and Somerset Stag-hounds.
39	5½	15½	28½	6+6	Do.	R. A. Sanders.
38½	5½	17½	31½	6+6	Quantock Hills . . .	Viscount Ebrington ; killed in 1885.
37½	5	22½	30½	7+7	Exmoor	C. Nelder ; killed in 1803.
36½	6	21½	28½	6+7	Do.	Sir A. Acland-Hood, Bart. ; killed in 1893.
35½	5	20½	27½	6+6	Do.	Earl Fortescue ; killed in 1812
35	5	15½	27	6+5	Do.	Com. G. F. Inglefield, R.N.
35	4½	25½	32½	5+6	Do.	Sir C. T. D. Acland, Bart. ; killed in 1893.
34½	5½	23½	31½	6+6	Do.	Viscount Ebrington ; killed in 1881.
33	6½	...	29	6+6	Do.	The late Sir T. D. Acland, Bart. ; killed in 1788.
33	5½	..	29½	9+7	Do.	" " 1792.
33	5½	39	32	7+7	Do.	" " 1877.
33	5½	13	25	8+7	Do.	Viscount Ebrington ; killed in 1881.
32	5½	30½	30½	7+4	Do.	Earl Fortescue ; killed in 1814.
32	4½	15½	26	6+6	Do.	Col. J. F. Hornby.
30½	5	24½	29½	6+6	Do.	Earl Fortescue.

¹ Weight 333 lbs., clean. Length of brow-tine, 17 inches.² Weight, 17 stone 2 lbs.³ See *Red Deer* in Fur and Feather Series.

Head of Stoke Park Red Deer.

d.—ENGLISH PARK RED DEER.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight	Locality.	Owner.
42½	6½			40	12		Melbury, Dorset	Earl of Ilchester.
41½	5	¹ 22½	32	.	7+6		Langley Park	J. G. Millais.
-40	..	.		41	7+7	..	?	Sir Greville Smyth, Bart.
-37½	7½	29½	27½	36½	10+9	.	Welbeck	Duke of Portland.
-37	7½	.		37	23	31 st. (clean)	Warnham	T. Lucas.
36	6½	24	30		6+6	...	Vaynol, North Wales	G. W. D. Assheton- Smith.
36	¹ 5½	19	28½		9+11		Woburn	Duke of Bedford.
35	6	14½	24		6+6		Vaynol, North Wales	G. W. D. Assheton- Smith.
34½	7	33	26½		20+20		Warnham	W. H. Lucas.
34½	¹ 5½	18½	26		8+8		Woburn	Duke of Bedford.
34	4½		23		6+6		Stowe	H.R.H. la Comtesse de Paris.
34	5½	21½	28½		7+7		Dorset	Earl of Ilchester.
34	6½			48 (about)	45		Warnham	C. T. Lucas.
33½	4½		33		6+6		Stowe	H.R.H. le Duc d'Orléans.
33½	5½	21½	28½	...	9+9		Woburn	Duke of Bedford.
33	7 above trez			45½	44		Warnham	C. T. Lucas.

Some of the above measurements are recorded by J. G. Millais in *British Deer and their Horns*.

¹ White Stag.



Skull and Antlers of Old English Red Deer.
(Found in cutting the Manchester Ship Canal.)

c.—ANCIENT BRITISH RED DEER.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Where dug up.	Owner.
-47½	8	35	..	.	5+8	Manchester Ship Canal excavations	Sir R. M. Brooke, Bart.
40	7½	22½	28½	43½	12+9	Combermere .	Duke of Westminster.
38½	5	18	30	39½	8+6	Ireland . .	Viscount Powerscourt.
36½	5	24	25	35½	8+8	Do. . .	Do.
36	5½	23	27	37½	10+9	Kerry, Ireland .	Do.
¹ 36	5½	.	...	42½	23	South Ireland .	Sir Douglas Brooke, Bart.
35½	5½	26½	32½	42½	13+11	Do. .	Sir Victor Brooke's Col- lection.
35½	5½	31½	27½	.	12+10	Ireland . .	Viscount Powerscourt.
-35	7	..	21	24	9+11	England .	C. G. Burrow.
34½	5	22	30	..	10+10	Ireland . .	Viscount Powerscourt.
33	4½	27	28½	35½	9+8	Do. . .	Do.

¹ Recorded by J. G. Millais.

f.—NORWEGIAN RED DEER.

"Hitteren may still be considered the headquarters of the red deer in Norway. These animals (unlike the elk, which would appear to be diminishing) are increasing in numbers, and are now found in districts where they were previously unknown. Of 138 killed in the whole country last year fifteen were shot in South Bergenhus, twelve in Romsdal, and thirty-one in North Bergenhus Amt" (SNOWFLY, *Field*, 11th December 1897).

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
-34	...	...	...	...	7	...	Norway . .	J. H. Thomas.
31½	4½	...	25½	...	6+5	...	Do. . .	A. Brassey.
31½	4½	...	24½	...	5+5	...	Do. . .	H. Seton-Karr.
31½	4½	...	28	...	4+3	...	Do. . .	E. M. Denny.
31	4½	23	25	29½	6+6	..	Do. . .	J. H. Thomas.
30	5	...	29	...	12	20 st.	Do. . .	E. M. Denny.
-30	4½	...	28	33	5+4	...	Do. . .	H. Seton-Karr.
30	4½	29½	30½	...	5+4	...	Do. . .	Do.
29½	4½	18½	23½	...	5+5	...	Do. . .	J. H. Thomas.
29½	4½	26	30½	...	6+5	...	Do. . .	G. L. Denmar.
28½	4	27	25	...	4+4	...	Do. . .	H. F. Kemp.
-28	5½	Single Antler			5	...	Do. . .	H. Seton-Karr.
27½	5	26	26	...	5+6	...	Do. . .	J. H. Thomas.
26½	4½	19½	21½	...	4+4	...	Do. . .	Do.
26	4½	...	30	32½	6+5	20 st. 9 lbs.	Do. . .	H. Seton-Karr.
24½	3½	21	20½	...	2+2	...	Do. . .	A. Henderson.

g.—SPANISH RED DEER.

¹ -40	...	...	36½	...	17	Sierra Morena, Spain	Abel Chapman.
-37½	...	...	34½	...	15	Sierra Morena . .	Do.
36	5½	37	...	...	15	South Spain . .	The late Lord Lilford.
-32½	...	...	...	...	13	Plains of Andalucia .	W. J. Buck.
-29	5½	...	25	...	12	Andalucia . .	Abel Chapman.
-28½	5½	...	26½	...	13	Do. . .	Do.

¹ A mountain head.

h.—OTHER CONTINENTAL RED DEER.

Some of the specimens in this list from Eastern Europe probably belong to the Maral, or Caspian, race.

Number of Points.	Weight in lbs. Avoidupois.	Length along Curve.	Circumference of Burr.	Circumference above Burr.	Circumference above Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag.	Locality.	Owner.
- 18	over 20	53½	11½	10	...	15½	10	...	...	...	206 kilos or 32 stone 5 lb.	Galicia	H. R. H. D. Miguel, Duke of Braganza.
- 16	23-36	53-54	10-04	8-47	7-28	8-20	8-75	11½	32	41½	250 kilos	Zemplen Comitatus	Count Géza Andrassy.
- 18	20-5	52	...	...	...	...	7-25	...	32-75	45	36 stone, cut up	Galicia	E. N. Buxton.
- 14	23	51	11	8½	7	9	7-20	27	38	47	236 kilos	Zemplen Comitatus	Count Géza Andrassy.
11	...	51	...	...	...	...	5-5	38-5	42-5	45-25	...	Hungary	Viscount Powerscourt (a).
1 14	...	51	...	...	...	...	7-25	23-5	39-5	50	...	Do.	Do.
- 14	...	50	...	...	...	...	6	42	40	...	...	La Mandria	J. J. S. Whitaker.
- 21	21-3	50-4	...	6-08	...	...	...	30	...	55-9	...	Pilis Mountains	Duke of Ratibor.
- 14	31 and an oz. or two	49½	...	...	...	...	...	...	39½	...	...	Radauc	Prince Lulu Rohan.
- 18	...	49½	10½	9½	6½	9½	...	...	...	48½	354 lbs.	Hungary	Count Joseph Hoyos.
- 12	21	49	10½	...	...	...	...	...	...	...	...	Do.	Prince Philip of Saxe-Coburg and Gotha.
- 16	...	49	...	...	...	...	...	...	...	43	...	Carpathians	Prince Henry of Liechtenstein.
- 20	25-3	48-8	...	...	...	...	...	...	...	...	...	?	Prince Hugo Windischgrätz.
14	...	48½	...	...	...	...	6½	34	30	37½	...	Carpathians	Lieut.-Col. L. Marshall.
- 19	...	48	...	8½	...	...	...	...	...	...	...	Do.	Prince Henry of Liechtenstein.
- 19	...	48	...	9	...	...	...	...	27	48	...	Gotha	H. R. H. the Duke of Saxe-Coburg and Gotha.
20	...	48	...	...	...	...	6½	33½	41½	51½	...	Germany	Viscount Powerscourt (c).
1 18	...	48	...	...	...	...	7	38	43	58	...	Hungary	Do.

1 Dag up.

OTHER CONTINENTAL RED DEER—continued.

Number of Points.	Weight in lbs. Avoirdupois.	Length along Curve.	Circumference of Burr.	Circumference above Burr.	Circumference above Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag.	Locality.	Owner.
-14	23	48	10	9½	7½	12	7½	13	25	32	37 stone 1 lb.	Galicia	H.R.H. D. Miguel, Duke of Braganza.
-16	20-57	47-84	11-21	9-25	7-87	7-87	...	...	...	...	...	Hungary	Prince Philip of Saxe-Coburg and Gotha.
15	...	47½	...	...	...	...	5½	30	40	50	...	Do.	Viscount Powerscourt.
-16	...	47½	11½	8½	7½	8½	...	35½	25½	29½	242 kilos	Do.	Count Ferdinand Trauttmansdorff.
13	...	47	...	...	...	...	6½	12½	31½	...	...	Galicia	A. von André.
8	...	47	...	...	...	...	6½	23	38½	...	...	Germany	Viscount Powerscourt (a).
-20	20-79	46-46	9-84	7-87	7-09	7-87	...	...	...	...	...	Hungary	Count Fery Nádasdy.
-16	20-68	46-46	11-02	9-45	8-07½	6-89	...	...	...	...	...	Do.	Prince Victor Ratibor.
-22	...	46½	9½	9½	6½	8½	...	52½	39½	42½	479 lbs.	Do.	Count Max Hoyos.
-16	19-91	46-06	11-81	9-25	6-89½	7-28	...	...	...	...	...	Do.	Count Mittrowsky.
-20	22-55	46-06	10-63	9-05	6-69	8-46	...	...	...	...	...	Do.	Count Bela Szechenyi.
-14	...	46	...	...	...	...	...	...	36	...	...	Carpathians	Prince Henry of Liechtenstein.
16	...	46	...	...	...	...	6½	38	42½	53	...	Hungary	Viscount Powerscourt (e).
13	...	46	9	...	...	...	7½	19½	31	...	...	N. Germany	Do. (d).
-18	...	46	...	9	...	...	...	...	36	60	...	Gotha	H.R.H. the Duke of Saxe-Coburg and Gotha.
15	...	46	...	...	...	...	5½	32	39½	50½	...	Hungary	Viscount Powerscourt.
-13	...	46	...	...	...	...	7½	...	29½	37	...	Carpathians	Prince Altenburg.
-18	..	46	10	...	...	...	...	...	35	54½	...	Bukovina, Hungary	Count Erbach.
-10	...	45½	...	...	...	...	6½	26½	38½	...	...	Hungary	Major-Gen. Sir Arthur Ellis, K.C.V.O.
...	...	45½	...	...	...	...	...	...	...	44	...	Do.	Sir Edmund G. Loder, Bart.
17	...	45½	...	...	...	...	6½	21½	35½	44½	...	Do.	Viscount Powerscourt (f).

- 20	17-05	45-27	10-04	8-07	7-28†	7-48	...	...	...	Do. .	Count George Erdödy.
- 12	20-46	45-27	9-84	6-49	6-69	7-48	...	...	...	Do. .	Count Belá Szechenyi.
- 15	...	45‡	9‡	...	...	...	23‡	34‡	...	Roumania .	Prince Demeter Ghika.
- 22	...	45‡	12	9‡	7	14 ⁹ ₁₆	29 ¹ ₁₆	34‡	...	Hungary .	Prince Henry of Liechtenstein.
19	...	45	...	...	...	...	23	37	...	Germany .	Viscount Powerscourt (δ).
15	...	45	...	...	...	...	23‡	36‡	43	Do. .	Do.
- 11	...	45	...	9	...	...	38	33	...	Gotha .	H.R.H. the Duke of Saxe-Coburg and Gotha.
- 11	...	45	...	...	...	...	...	39	46-5	Galicia .	E. N. Buxton.
20	...	44‡	...	...	...	...	14‡	28‡	...	Carpathians	Viscount Powerscourt (g).
17	...	44‡	...	...	...	...	17	32	...	Hungary .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
- 20	15-73	44-49	9-05	7-87	9-05	12-21	...	...	...	Do. .	Count Tassilo Festetics.
- 14	16-17	44-49	10-63	9-45	6-49†	8-07	...	...	...	Do. .	Count Belá Szechenyi.
- 8	17-38	44-09	11-41	9-84	7-68†	7-68	...	...	...	Do. .	Count Michael Esterhazy.
- 14	18-37	44-09	11-41	10-24	7-28	6-89	...	...	...	Do. .	Jeno Kund.
17	...	44	...	...	...	...	31	39‡	55‡	Germany .	Viscount Powerscourt.
16	...	44	...	...	...	...	23‡	33	...	Do. .	Do. (h).
8	...	44	...	...	...	...	24‡	39	...	Hungary .	A. von André.
- 18	19-14	43-7	10-04	8-46	7-09†	9-64	...	...	...	Do. .	Count Rudolph Erdödy.
- 14	20-24	43-7	10-43	8-27	7-09†	7-28	...	...	...	Do. .	F. Pausinger.
- 20	18	43-6	10-02	8-03	...	12-23	36-06	25-12	...	Do. .	Count Tassilo Festetics.
12	...	43‡	11	...	6‡	5‡	15	29‡	36	Do. .	A. von André.
- 20	17-6	43-31	10-04	8-07	7-28	8-27	...	...	...	Do. .	Count Tassilo Festetics.
- 14	15-95	43-31	10-43	8-66	7-09	7-28	...	...	...	Do. .	Prince Philip of Saxe-Coburg and Gotha.
21	...	43	...	...	...	...	37‡	38‡	...	Germany .	Viscount Powerscourt (j).
21	...	43	...	...	...	...	28‡	33	...	Do. .	Do. (i).

OTHER CONTINENTAL RED DEER—continued.

Number of Points.	Weight in lbs. Avordupois.	Length along Curve.	Circumference of Burr.	Circumference above Burr.	Circumference above Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag.	Locality.	Owner.
- 16	18.92	42.91	10.04	8.66	7.48	8.27	...	...	...	...	...	Germany	Prince Philip of Saxe-Coburg and Gotha.
- 20	...	42½	9½	8½	7½	9½	...	47½	29½	36½	257 kilos	Do.	Count Henry Funfkirchen.
- 16	16.06	42.91	9.84	8.27	6.69	7.09	...	...	...	...	...	Do.	G. Jankovich.
- 14	20.06	42.91	9.64	8.66	7.68	7.28	...	...	...	...	...	Do.	Count B. Keglevich.
- 20	...	42.3	9.1	8.5	...	...	...	...	...	...	...	Do.	Count Szechenyi.
- 18	19.1	42.7	...	8.5	...	...	...	...	...	...	...	Szilvás	Count Bombelles.
- 16	17.6	42.13	11.61	10.24	7.09†	7.68	...	...	...	...	265 kilos	Do.	Count Fery Nádasdy.
- 14	18.85	42.13	9.64	9.05	7.09	7.87	...	...	...	...	...	Do.	Prince Philip of Saxe-Coburg and Gotha.
- 20	18.8	42.1	...	9½	...	...	...	...	...	...	...	Munkacs	Count Jose Hoyos.
18	...	42	...	...	...	...	5½	26½	37½	43	...	Austria	Viscount Powerscourt (k).
16	...	42	...	...	...	...	6	21	31½	...	...	Germany	Do.
12	...	42	...	...	...	...	...	...	35½	40	...	Galicia	E. N. Buxton.
- ...	...	42	...	...	...	...	5½	...	30	...	...	Styria	Sir Clement Hill, Bart.
- 15	...	42	10	...	...	...	...	...	...	43	45	Gotha	H.R.H. the Duke of Saxe-Coburg and Gotha.
12	...	41½	...	...	...	...	5½	...	25½	...	...	Germany	British Museum.
- 18	18.26	41.73	10.24	9.25	7.09†	8.07	...	...	...	...	...	Hungary	Count Fery Nádasdy.
16	...	41½	...	...	...	...	6	28	36	...	...	Do.	Viscount Powerscourt.
14	...	41½	...	...	...	...	6½	26½	34	...	...	Germany	Do.
14	...	41	...	...	...	...	6½	26	34	...	...	Hungary	Do.
15	...	41	...	...	...	...	5½	27½	32½	...	...	Germany	Do.
- 14	20	41	...	10½	7½	9½	...	...	31½	...	...	Hungary	Prince Philip of Saxe-Coburg and Gotha.
12	21.01	40.94	12.21	10.63	7.09†	8.27	...	...	...	...	230 kilos	Do.	Do.

- 11	...	40½	...	8½	...	28½	31½	...	Roumania .	Prince Nicolas Ghika.
- 14	20	40½	...	7½	...	...	26	...	Hungary .	Prince Philip of Saxe-Coburg and Gotha.
- 13	...	40½	...	...	5	20½	27½	...	Tyrol .	H.R.H. the Duke of Saxe-Coburg and Gotha.
- 20	18-50	40-10	...	8-10 (?)	...	...	...	...	Agarév .	Count Tassilo Festetics.
18	...	40	...	...	5½	34	31½	40	Hungary .	Viscount Powerscourt.
- 12	...	40	10	...	36	31	36	...	Tyrol .	H.R.H. the Duke of Saxe-Coburg and Gotha.
- 18	...	40	10	...	...	...	28	49	Gotha .	Do.
15	...	39½	10	9½	6½	21½	30½	37½	Hungary .	A. von André.
8	...	38½	9½	8½	5½	27½	33	36½	Do. .	Do.
- 14	26½	37½	13	...	8½	...	23½	...	Do. .	Prince August Leopold of Saxe-Coburg and Gotha.
- 14	...	37	...	...	...	21½	30	...	Macedonia	H. J. Elwes.
- 20	...	36½	10½	7½	...	...	12½	...	Hungary .	Prince Philip of Saxe-Coburg and Gotha.
10	...	31½	...	...	...	12	18½	...	Tenuta la Mandria	H.R.H. le Duc d'Orléans.
- 44	19½	30	...	...	...	...	...	44½	Rominten .	H.I.M. the German Emperor.

NOTES AND EXPLANATIONS.

— Many specimens marked thus are uneven pointers.

- a.* Length of brow tine, 22½ in. Bez, 23 in.
b. " " " 21¼ in. On papier-mache head. A very large 8 pointer.
c. Palmated tops 6 in. across. Length of brow tine, 17½ in.
d. Length of brow tine, 21 in. Left trez tine, 21 in.
e. Shot by a peasant in a drive in Buckowina, in 1896.
f. Bought in Munich.
g. Length of left trez tine, 25 in. Bought in Vienna in 1863.
h. Right antler is forked at trez tine, and carries three points

on this third tine, forming almost a cup. Mounted on a papier-mache head.

i. Tops palmated 6 in. across.

j. Right trez tine forked, tops palmated.

k. Killed in 1809. Bought at Linz, Austria, in 1898.

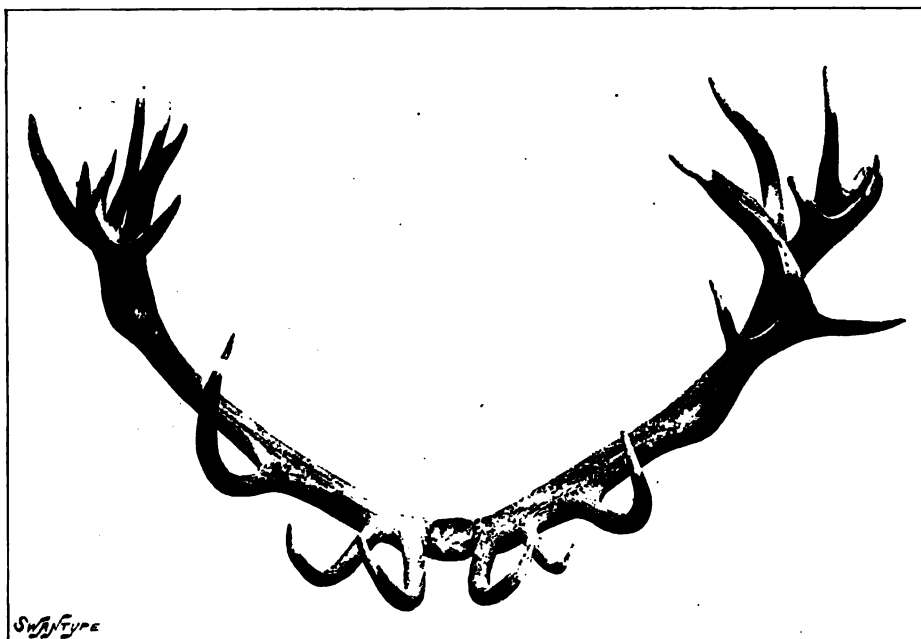
l. A remarkable specimen of a palmated head.

o. Trez tine on right antler forked.

p. From the Hildesheim Collection, near Hanover.

† The circumference of these antlers is taken above middle tine.

Viscount Powerscourt informs me that the 18 stag heads in the entrance hall at Powerscourt, mounted on papier-mache heads, were bought at Munich in 1863, by the advice of the late Count Arco-Zinneberg, the owner of the famous collection in the Wittelsbacher Platz at Munich. The hall where they hang contains upwards of 2500 heads of German Red-deer and Roe-deer of extraordinary weight and size, forming with the one exception of the King of Saxony's collection at Moritzburg, near Dresden, the finest in the world. Count Arco became so well known as a collector that every fine specimen was brought to him for purchase.



Antlers of Red Deer. From a specimen in the Castle at Moritzburg.
After Dr. A. B. Meyer.

i.—ANCIENT CONTINENTAL RED DEER.

Length (straight).	Circum- ference.	Tip to Tip.	Spread.	Points.	Locality.	Owner.
...	...	...	...	33 + 29	?	H.M. the King of Saxony, Moritzburg.
¹ -48	14 of burr	...	6 ft. 3 $\frac{1}{10}$	12 + 11	?	Do.
...	...	...	...	25 + 12	?	Do.
...	...	...	...	28	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
-46 $\frac{1}{2}$	8 $\frac{3}{8}$ above trez	5 ft. 2 $\frac{1}{4}$	...	22	Alpine Stag?	Count Erbach-Erbach.
...	9 $\frac{3}{8}$	...	...	28	Do.	Do.
...	...	...	...	22	Switzerland	Do.
(on curve) 39 $\frac{3}{4}$	5 $\frac{1}{4}$	16	22 $\frac{1}{2}$ inside	9 + 9	?	Viscount Powerscourt.
39 $\frac{1}{2}$	6 $\frac{1}{2}$	22	31 $\frac{1}{2}$ 39 outside	6 + 6	Germany .	Do.

¹ Weight, 4 $\frac{1}{2}$ lbs.

j.—NEW ZEALAND RED DEER (*introduced*).

Average height at shoulder, 47 inches.

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
-42	5½	...	...	37½	9+7	...	Otago . .	W. Allen.
-41½	6	16	...	28½	6+5	...	Do. . .	Do.
-41	6½	...	...	31½	6+5	...	Do. . .	J. S. Handyside.
-41	5½	...	...	37	7+6	...	Do. . .	C. R. Westmacott.
-39	5½	...	...	31	6+6	...	Do. . .	H. McLean.
-38	5	...	...	33	6+6	...	Do. . .	E. C. Studholm.
37½	5½	19½	28½	...	6+6	400 lb. esti- mated	Do. . .	C. R. Westmacott.
-37	5	...	...	34	6+5	...	Do. . .	W. Telford.
-36½	6½	...	32½	...	9+9	...	Wairarapa .	J. S. Handyside.
-36	4½	...	...	33½	5+5	...	Otago . .	W. Telford.
31½	5½	10½	18	...	6+7	...	North Island .	Rupert Wilkin.

Skull and Antlers of Caspian Red Deer shot in the Western Caucasus by St. George Littledale.

CASPIAN RED DEER or MARAL (*Cervus elaphus maral*).

In this variety of the red deer, which probably intergrades with the typical race in the western Carpathians, the height at the shoulder reaches to about $4\frac{1}{2}$ feet, and the build is stouter, the neck thicker, and the head longer and more pointed than in the true red deer. The reddish summer coat of immature animals is very generally marked with numerous yellowish spots; and the colour of the winter coat is dark slaty gray on the back, with the tail-patch of a very bright

yellow, and a large amount of black on the shoulders, thighs, and under parts. The large and massive antlers are generally less complex than those of the typical race, the number of points being seldom more than eight on a side, and frequently only six; while the bez tine, which may be wanting, is often shorter than the long and upwardly curved brow tine, and the fourth tine is generally more distinct from the crown. The average weight is given as about 40 stone.

The typical locality of this race of red deer is the Caspian provinces of Northern Persia, whence it extends into the Crimea, and probably Asia Minor, and so on into Transcaucasia, the Caucasus, probably Circassia, and the Galician Carpathians. The exact limits between the range of this and the typical race are not yet determined; and it is noteworthy that specimens from the Caucasus have shorter faces than those from Northern Persia, and thus approximate to the true red deer. In Asia the term "maral" is applied not only to this animal, but also to Bedford's Deer and the Altai Wapiti.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Esti- mated Weight. st. lbs.	Locality.	Owner.
48½	6	30	41½	...	5+6	...	Ichater Dagh, Crimea	H. R. H. the Duke of Saxe- Coburg and Gotha.
48½	7½	(single antler)	...	...	12	...	Asia Minor	Lord A. Hay, British Museum.
48	7½	...	...	...	..	...	Caucasus	St. George Littledale.
47½	5½	38	...	...	6+5	...	Do.	Do.
47	7½	36	37½	...	6+7	...	Do.	Do.
46½	5½	18	33	...	8+8	...	Do.	Do. British Museum.
45½	7½	25½	35½	...	8+8	...	Do.	St. George Littledale.
-45½	8½	65½	...	...	14	...	Do.	Grand Duke Mikhaelo- vitch.
45½	7½	32½	40½	46	8+8	...	Do	Prince Demidoff.
45½	5½	42	35½	...	6+7	...	Ak Dagh, Asia Minor	F. C. Selous.
45½	7½	...	...	...	9+6	...	Asia Minor	Sir Edmund G. Loder, Bart.
-45	8	36	42	...	11+10	53 4	Caucasus	Prince Demidoff.
44½	6½	33½	35½	...	7+5	...	Do.	St. George Littledale.
44½	6½	(single antler)	...	...	9	...	Asia Minor	C. G. Danford, British Museum.
43½	6	...	40	...	8+6	...	Asia Minor	M. Le C. Findlay.
43½	6½	21½	35	...	7+7	...	Caucasus	St. George Littledale.
43½	5½	16	28	...	6+6	...	Crimea.	Earl of Dunmore.

CASPIAN RED DEER or MARAL (*Cervus elaphus maral*)—*continued*.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Esti- mated Weight.	Locality.	Owner.
42½	6½	25	..	34	10+11	...	Crimea (?)	H. J. Elwes.
42½	7	27	31½	34½	8+7	...	Caucasus	Prince Demidoff.
42	6	42	...	50	10+9	...	Crimea (?)	H. J. Elwes.
41½	5½	15½	28½	...	6+5	...	Caucasus	H.R.H. le Duc d'Orléans.
40½	5½	22½	32½	...	6+6	...	Ak Dagb	H. O. Whittall.
40½	5½	28½	34½	...	8+7	...	?	Duke of Bedford.
40	5½	21½	27½	..	6+6	..	Ak Dagb	H. O. Whittall.
39½	5½	33	36½	...	8+7	..	Do.	F. C. Selous.

Head of Caspian Red Deer shot in Asia Minor by F. C. Selous.

BARBARY RED DEER (*Cervus elaphus barbarus*).

For characters, see under heading of *Cervus elaphus*.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
38 $\frac{7}{8}$	5 $\frac{3}{4}$	...	...	...	6 + 5	North Africa .	Sir Edmund G. Loder, Bart.
36 $\frac{1}{2}$	4 $\frac{3}{4}$	22 $\frac{1}{4}$	28 $\frac{3}{4}$	...	4 + 4	Do. .	British Museum.
36 $\frac{7}{8}$	4 $\frac{1}{2}$	17 $\frac{1}{2}$	25 $\frac{7}{8}$	...	4 + 4	Do. .	Do.

DUKE OF BEDFORD'S DEER (*Cervus xanthopygus*).

Apparently allied to the red deer, but the antlers probably with not more than seven points each, and the coat rather more wapiti-like. Tail comparatively short, and limbs relatively long, as is the face. In summer the head and neck are dark slaty, as are the inner sides of the limbs, while the rest of the upper parts is bright foxy red (occasionally browner), with the tail-patch sometimes totally wanting, or rather indistinct, and little or no black on the under parts and inner surfaces of the thighs; in winter the upper parts brownish gray with a very large and conspicuous bright orange tail-patch and a blackish mane, the tips of the hairs showing a large amount of black.

This deer inhabits Manchuria, and probably some of the other districts of North-Eastern Asia, but the western limits of its range are still undetermined. It is regarded by Monsieur E. de Pousargues as inseparable from the Manchurian wapiti; but this is not borne out by the specimens now living in England. If they survive, the question can be decided in a year or two.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-20 $\frac{1}{4}$	4 $\frac{3}{8}$	14 $\frac{1}{2}$	16 $\frac{1}{4}$	4 + 3	Manchuria . .	Paris Museum (Type Specimen).

Head of Hangul. From a specimen shot by J. G. Apcar in Kashmir.

HANGUL or KASHMIR STAG (*Cervus cashmirianus*).

In this very distinct species the first or brow tine arises at a considerable distance above the burr, or coronet, of the antlers, instead of close to it, as in the red deer; the bez tine is usually longer than the brow; the total number of points is generally only five aside, although a third tine may occasionally be added to the normal terminal pair, thus forming an imperfect cup; and the beam of each antler is much curved in towards the middle line of the head. The tail is short, and not included in the light patch on the buttocks, which, at least frequently, is very small; and the tuft on the hind cannon-bone is situated lower down than in the red deer. In winter the general colour of the coat is brown, brownish ash, or liver-colour, with the hairs speckled; the light area on the inner side of the buttocks

being dirty white, with a blackish line on the inner sides of the thighs, the upper side of the tail black, and the lips, chin, and inner surface of the ears white or whitish. In the fawns the spotting is stated to remain much longer than in the red deer. In the pairing season the old stags squeal like a wapiti, instead of roaring in the red deer fashion.

The typical hangul inhabits the forest districts of the north side of the vale of Kashmir and some of the neighbouring valleys, at elevations ranging from 9000 to 12,000 feet in summer, but descending to about 5000 feet in winter. In this race (*C. cashmirianus typicus*) the terminal or fifth tines of the antlers are so much bent inwards as to be separated by a comparatively small interval. In the forests of the Yarkand river the species is represented by a second local race (*C. cashmirianus yarcandensis*), in which the antlers are less spreading, with their terminal tines less inclined inwards, and therefore more widely separated. The trez tine in this race is typically larger and longer than either of the lower ones, the brow and bez, in this respect and in the closer proximity of the brow and bez tines more resembling the Caspian than the Kashmir Stag. The height at the shoulder varies from about 4 feet to 4 feet 4 inches; the average weight being about 450 lbs.

This deer, although first discovered by the late Dr. H. Falconer in the Kashmir valley, was named by Dr. G. R. Gray of the British Museum. The finest pair of antlers of which Mr. A. O. Hume has any record were given by Raja Gulab Sing to Colonel King, then commanding the 14th Dragoons. On his death they passed to Captain, afterwards, I think, Colonel, Prettyjohn of the same regiment. What became of these antlers Mr. Hume was never able to ascertain, but he measured them at Meerut in 1852 or 1853, and the record stands, R. 52 L. 53½, measured along the curve inside. Girth 10 inches at burr, and 7 half-way between bez and trez tines. They were a very wide-branching, symmetrical pair.

Length on out-side curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-48	...	...	...	...	Kashmir	The late Dr. Leith Adams.
-47	7½	21	36	7+5	Do.	Bombay Natural History Society's Museum.
47	6¾	21½	36¾	5+5	Do.	Sir Edmund G. Loder, Bart.
47	6¼	30	35½	8+8	Do.	Duke of Wellington.
-47	...	...	...	...	?	Major A. E. Ward.
45½	8	35	41	6+6	Kashmir	Hume Collection, British Museum.
45½	6	25¾	36	8+8	Do.	Sir Victor Brooke's Collection.
45	6¾	19	34	6+6	Do.	Col. R. Pole-Carew, C.B.

HANGUL or KASHMIR STAG (*Cervus cashmirianus*)—continued.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-44 $\frac{3}{4}$	6	20	43	5+5	Lidar Valley . .	Officers' Mess, Q.O. Corps of Guides.
-44 $\frac{1}{2}$	6 $\frac{1}{2}$	31 $\frac{1}{2}$	44 $\frac{3}{4}$	5+5	Kishenganga Valley	Do.
-44 $\frac{1}{2}$	6	21 $\frac{1}{4}$	36 $\frac{1}{2}$	5+5	Do. . .	The late Capt. E. W. Codrington.
44	7 $\frac{1}{4}$	30 $\frac{1}{2}$	40 $\frac{1}{4}$	5+5	Sind Valley . .	P. H. G. Powell-Cotton.
44	6 $\frac{3}{4}$	23 $\frac{1}{4}$	36 $\frac{1}{2}$	5+5	Do. . .	Naval and Military Club.
44	6	27	36	5×5	Kashmir . .	Hon. Walter Rothschild.
43 $\frac{7}{8}$	5 $\frac{7}{8}$	15 $\frac{7}{8}$	32	5+5	Do. . .	Hon. Charles Ellis.
43 $\frac{3}{8}$	6 $\frac{1}{2}$	25 $\frac{3}{8}$	36 $\frac{1}{2}$	...	Do. . .	Do.
43	6	20	35	6+5	Sind Valley . .	A. O. Hume, C.B.
43	5 $\frac{1}{4}$	26 $\frac{1}{8}$	37 $\frac{7}{8}$	6+5	Kashmir . .	Martyn Kennard.
42	4 $\frac{1}{2}$	13 $\frac{1}{4}$	29 $\frac{1}{4}$	5+5	?	Duke of Bedford.
42	5 $\frac{3}{4}$	13 $\frac{1}{2}$	26 $\frac{1}{2}$	5+5	Kashmir . .	E. L. Phelps.
41 $\frac{3}{4}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	35	5+5	Do. . .	Major Kingsley Foster.
41 $\frac{3}{8}$	5 $\frac{3}{4}$	23 $\frac{3}{4}$	33	5+5	Do. . .	R. Lydekker, British Museum.
41 $\frac{1}{4}$	6	15 $\frac{3}{8}$	29	7+6	Tral Preserve . .	P. W. Cobbold.
41 $\frac{1}{4}$	5 $\frac{1}{4}$	34	49	6+5	?	C. H. Seely.
-41	...	...	...	13	Tral Preserve }	The Maharaja of Travancore, G.C.S.I.
-41	...	...	...	12	Do. }	
-41	6	23	37 $\frac{1}{2}$	...	Kashmir . .	The late Major W. D. B. Fenton.
40 $\frac{1}{2}$	5 $\frac{3}{8}$	31 $\frac{1}{2}$	39 $\frac{1}{2}$	6+5	Do. . .	F. W. H. Walshe.
40 $\frac{1}{2}$	6 $\frac{1}{2}$	15 $\frac{1}{2}$	28	5+5	Do. . .	Sir Robert Harvey, Bart.
40 $\frac{1}{4}$	7 $\frac{3}{8}$	24 $\frac{1}{2}$	3	5+5	Do. . .	Capt. H. W. Codrington.
39 $\frac{1}{2}$	5 $\frac{3}{4}$	21 $\frac{1}{2}$	33	5+5	Do. . .	H. Maude.
39	5 $\frac{1}{4}$	26	35 $\frac{1}{2}$	5+5	?	Major A. Nugent.
38 $\frac{1}{2}$	5	14 $\frac{1}{2}$	29	5+5	Rewa Nalla . .	The late Major A. Burton.
37 $\frac{1}{2}$	5	17	28 $\frac{1}{2}$	5+5	Kashmir . .	Reginald Beech.
37 $\frac{1}{2}$	5 $\frac{3}{8}$	26 $\frac{3}{4}$	34 $\frac{1}{2}$	6+6	Do. . .	Major C. S. Cumberland.
37	5 $\frac{3}{8}$	22 $\frac{3}{8}$	31 $\frac{1}{4}$	6+6	Do. . .	W. R. Bindloss.
37	5	20	29	5+5	Do. . .	H. Z. Darrah.
37	5 $\frac{3}{4}$	19 $\frac{1}{2}$	31 $\frac{1}{2}$	5+5	Do. . .	J. G. Apcar (see Illustration).

Skull and Antlers of Yarkand Stag. From A. O. Hume's specimen.

YARKAND STAG (*Cervus cashmirianus yarcandensis*).

For characters, see Hangul, p. 37.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
40½	5½	23½	31½	..	5+5	Near Maralbashi .	A. O. Hume, C.B. (See illustration.)
40	5½	25	31	...	6+5	Maralbashi .	E. L. Phelps.
39½	6	24½	25	.	7+6	Do. .	A. O. Hume, C.B.
39½	5½	16½	28½	...	6+6	Do. .	David T. Hanbury.

Skull and Antlers of Shou. From A. O. Hume's specimen.

THE SHOU (*Cervus affinis*).

A very large stag with antlers of the general type of those of the hangul, but larger, and with the beam bent suddenly forward at the trez tine, so that the upper half overhangs the face, the number of points being usually five; the brow tine is less constantly longer than the bez. General colour probably rufous brown, with a light tail-patch in winter.

The habitat of this imperfectly known deer appears to be the districts immediately north of Bhutan, and probably the valley eastwards of Chumbi, which drains northwards into the Sangpo. An apparently allied, although smaller, deer is found in Russian Turkestan (Bokhara or Khiva).

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
55 $\frac{3}{4}$	6 $\frac{1}{2}$	17 $\frac{1}{2}$	40 $\frac{3}{8}$	7 + 6	?	A. O. Hume, C.B. (See illustration.)
54 $\frac{3}{8}$	6 $\frac{3}{8}$	21 $\frac{3}{8}$	37 $\frac{1}{2}$	5 + 5	?	Dr. Campbell, British Museum.
55 $\frac{3}{4}$	6 $\frac{7}{8}$	26 $\frac{1}{2}$	44	5 + 5	?	The late B. H. Hodgson, British Museum.
53 $\frac{1}{2}$	6 $\frac{3}{8}$	30 (see illustration, p. 55)	45 $\frac{3}{4}$	4 + 5	?	Hume Collection, British Museum.
-53	9	...	40	5 + 5	?	The late Col. H. C. B. Tanner.
52	8	...	...	...	?	Hon. Walter Rothschild.
49 $\frac{1}{2}$	7 $\frac{1}{2}$	38	45 $\frac{1}{2}$	5 + 5	?	Col. J. Biddulph.
48 $\frac{1}{2}$	6 $\frac{1}{2}$	19 $\frac{3}{8}$	38 $\frac{1}{8}$	7 + 5	?	Sir Edmund G. Loder, Bart.
-48	6 $\frac{3}{4}$	30 $\frac{3}{4}$	¹ 39	5 + 5	Tibetan Frontier	H. J. Elwes.
-48	6 $\frac{3}{8}$	17	34 $\frac{1}{2}$	6 + 5	?	H. R. H. le Duc d'Orléans.
47 $\frac{1}{2}$	5 $\frac{3}{4}$	30 $\frac{3}{8}$	40 $\frac{1}{2}$	5 + 5	?	British Museum.
-43	...	...	...	...	Chumbi Valley	The late Sir Ashley Eden, G.C.S.I., Indian Museum.
42 $\frac{3}{4}$	5 $\frac{3}{4}$	23 $\frac{3}{8}$	31 $\frac{1}{2}$	5 + 5	?	British Museum.
41	6 $\frac{1}{2}$	...	...	6 + 4	?	Duke of Bedford.
39 $\frac{3}{4}$	5 $\frac{3}{4}$	20	31 $\frac{1}{2}$	5 + 5	?	Edward P. Tennant.

¹ Spread.**THOROLD'S DEER (*Cervus albirostris*).**

Thorold's deer is of the same approximate dimensions as the hangul, from which it is readily distinguished by the more flattened antlers, which have no bez tine, and do not curve inwards, but are suddenly bent backwards at the point of origin of the trez; the total number of points being either five or four. Equally distinctive is the pure white muzzle and chin, the white inner surface of the ears, the reversal of the hair on the middle of the back, so as to form a kind of hump on the withers with the points of the hairs directed towards the neck, the low position and large size of the gland-tuft on the hind cannon-bone, and the shortness of the tail, which is included in the very large straw-coloured area of the buttocks. The general colour of the coat is uniformly dark brown, with the hairs, which are remarkable for their coarse and brittle nature, minutely speckled.

The Tibetan plateau, with perhaps some of the neighbouring parts

of Central Asia, is the home of this fine species of deer, which was originally described by the late Colonel Przewalski under the name given above. Subsequently two examples were obtained by Dr. W. G. Thorold, to the north-east of Lhasa, at an elevation of between 13,000 and 14,000 feet, which, under the impression that they indicated a new species, were named *C. thoroldi* by Mr. W. T. Blanford.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
38½	4½	37	27	5+4	Central Tibet . .	Hon. Walter Rothschild.
38	5½	...	...	5+5	Do. . . .	British Museum.
-36	4½	32	32	5+5	? ¹	Indian Museum.

¹ Bought at Darjiling, thither brought by Tibetans.

TRUE WAPITI (*Cervus canadensis*).

Wapiti are very large deer of the red deer group, easy of recognition by the form of their antlers, which are of great size, carrying more than five tines, curving backwards, and much flattened in the upper half. They always have the bez tine developed, but their most characteristic feature is the great size of the fourth tine, which is larger than either of the others, and with the fifth, which is also long, forms a nearly straight fork; the fourth, fifth, and sixth tines being situated almost in the plane of the portion of the beam immediately below them, so that they more or less completely hide one another when viewed from the front aspect. The brow tine rises close to the burr, and is nearly as long as the bez. The tail is extremely short, the light tail-patch very large; and the neck and under parts are blackish, the general colour of the summer coat being yellowish brown on the upper-parts.

Wapiti (known in America as Elk) range from North America to North-Eastern and Central Asia; the typical form being the East American wapiti (*C. canadensis typicus*), in which the legs are comparatively short, and the portion of the antlers above the fourth tine is fully developed, the height at the shoulder reaching to about 5 feet 4 inches, and the weight from 700 to 1000 lbs. On the other hand, the West American wapiti (*C. canadensis occidentalis*) differs by the abortion of the upper part of the antlers, the darker colour, and lighter build.

Head of East American or true Wapiti.
Shot by W. Moncreiffe. For measurements see next page.

TRUE WAPITI (*Cervus canadensis*)—continued.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
-70	...	14½ above burr.	...	...	68	6+6	Olympic Mts., Washington	W. F. Sheard.
-66	...	...	...	...	60	6+6	Wyoming	J. Darley.
-65	7½	...	...	...	40	7+7	Laramie Plains, Wyoming	Schoverling, Daly, and Gales.
-64½	...	9½	41½	49	...	6+7	Wyoming	James J. Harrison.
64½	8	...	31½	45	52	7+6	?	Viscount Powers-court.
-64½	8	...	...	48	...	7+7	N.W. Wyoming	A. Rogers.
-63½	8½	...	49½	48½	...	7+9	North Prong	Frank Cooper.
62	7½	...	33½	50½	...	7+7	Snake River, Colorado	Ernest Farquhar.
61½	7½	...	...	45	...	6+6	Bighorn Mts., Wyoming	„ „
-61	8	...	...	52	...	6+6	Do.	H. Seton-Karr.
61	8	...	36½	46½	55	8×8	?	Viscount Powers-court.
¹ -60½	7½	...	...	52	...	6+6	?	W. A. Baillie Grohman.
60½	8½	...	...	55	...	7+6	Wyoming	E. Grant.
60½	7½	...	43	46½	...	6+6	Do.	Major C. C. Ellis.
60	6½	...	31½	41½	44	9+7	?	Viscount Powers-court.
-59½	...	13	...	...	...	...	Wyoming	The late Sir Samuel Baker.
59½	8½	3	37½	47	...	8+8	S.E. Do.	Lieut.-General B. Hankey.
59½	7½	...	...	¹ 45	...	6+6	?	H. Seton-Karr.
58½	8½	...	39½	43½	53½	7+6	?	Viscount Powers-court.
58½	...	9 between brow and bez.	...	46½	50½	10+7	Wyoming	Hon. T. A. Brassey.
-58½	8½	...	...	44½	...	6+6	Do.	J. D. Cobbold.
-58½	8½	...	48	...	50	6+6	?	F. B. Tolhurst.
58	9½	42	47½	7+6	...	7+6	Wyoming	A. H. Straker.
58	7½	...	43½	49	...	9+8	Do.	W. Moncreiffe. (See illustration.)
58	7	...	46	49	51½	6+6	?	Viscount Powers-court.
57½	6½	...	24½	35½	...	6+6	Montana	Capt. Abdy.
57½	7	...	47	48½	...	6+6	Wyoming	Hon. Charles Ellis.
57½	...	9½	32	42½	...	7+7	Do.	Sir Humphrey de Trafford, Bart.

¹ Measured by American Exhibition Committee.

TRUE WAPITI (*Cervus canadensis*)—continued.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
57	8½	...	35½	34	43	6+6	Wyoming	Viscount Powerscourt.
-57	7½	...	...	...	...	7+7	Do.	Count F. Trauttmansdorff.
57	7½	...	53	49½	61	8+9	Wyoming	Sir Edmund G. Loder, Bart.
57	7½	...	35½	41½	...	6+6	Yellowstone Park	British Museum.
-56½	6½	...	...	...	46½	6+6	Two Ocean Pass	Theodore Roosevelt.
56	8	...	39½	40½	44	8+6	?	Viscount Powerscourt.
-56	7½	...	...	...	...	6+6	Wyoming	Count F. Trauttmansdorff.
56	7½	...	35	43½	...	8+7	Saskatchewan District, Canada	Earl of Ava.
55½	7½	...	43½	48½	...	7+7	Wyoming	Hon. Charles Ellis.
55½	7	...	43½	47½	...	6+5	Saskatchewan District, Canada	Capt. G. Dalrymple White.
-55½	8	...	38	43	...	6+6	Wyoming	James J. Harrison.
-55½	7½	...	...	48½	...	8+7	?	Otho Shaw.
55½	6½	...	44	45½	...	6+6	?	A. H. Pollen.
55½	7½	...	46½	...	...	7+6	?	St. George Little-dale.
55	8½	...	...	41½	...	6+6	Wyoming	Major Maitland Kirwan.
55	8	...	...	45½	...	7+6	Do.	Do.
55	7½	...	...	47½	...	6+5	Do.	E. N. Buxton.
-55	8½	...	53	54½	...	17	?	Sir H. B. Meux, Bart.
-55	8½	...	...	41½	...	6+6	?	A. Pendarves Vivian.
¹ 55	7½	...	21½	35½	43	7+6	?	Viscount Powerscourt.
² 55	6½	...	...	...	...	14	America	Duke of Bedford.
55	6½	...	...	...	...	6+6	Colorado	Crawford G. Logan.
-54½	6½	...	39½	43½	...	6+6	Montana	Count Scheibler.
54½	8	...	37	45½	...	6+6	Wyoming	Sylvester Browne.
54½	...	...	...	...	...	14	Colorado	Sir Peter Walker, Bart.
54½	8	...	34½	45½	...	6+5	Wyoming	Lieut.-Col. Hon. W. Coke.
54½	9	...	...	palmed	...	11+7	Montana (?)	G. Wrey.
54½	6½	...	28	37	46	6+6	?	F. J. Mitchell.

¹ Shot by the Earl of Dunmore.² Shed antlers weighed 20 lbs.

TRUE WAPITI (*Cervus canadensis*)—*continued.*

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
54 $\frac{3}{4}$	6 $\frac{1}{2}$	...	38 $\frac{3}{4}$	44 $\frac{1}{2}$	...	7+6	Wyoming	E. N. Buxton.
-54 $\frac{1}{2}$	8	...	...	43 $\frac{1}{2}$	...	10+10	Montana	W. A. Tulloch.
54 $\frac{1}{2}$	7 $\frac{1}{8}$	...	49 $\frac{7}{8}$	...	...	9+7	Wyoming	Hon. Walter Rothschild.
-54	8 $\frac{1}{2}$	...	...	...	...	13	Teton Mountains	H. Lennard.
¹ 54	7 $\frac{1}{2}$	...	...	48	...	8+7	Wyoming	Moreton Frewen.
54	7 $\frac{1}{2}$	...	32 $\frac{3}{4}$	39 $\frac{1}{2}$	47	11+8	Do.	Viscount Powerscourt.
54	7 $\frac{1}{8}$	...	30 $\frac{3}{4}$	37 $\frac{3}{8}$	...	6+6	Do.	Capt. E. G. Verschoyle.
54	7 $\frac{1}{2}$	...	...	48	...	7+8	Do.	Moreton Frewen.
54	7	...	29 $\frac{1}{2}$	35 $\frac{1}{2}$	44	7+6	Do.	H. Seton-Karr.
54	7 $\frac{3}{4}$	...	48	44	...	12	?	M. P. Grace.
-53 $\frac{1}{2}$	8	...	43	44 $\frac{1}{2}$	...	8+7	Wyoming	Count E. Hoyos.
-53 $\frac{1}{2}$	6 $\frac{1}{2}$	...	39	42	...	6+6	Do.	Captain G. Dalrymple White.
53 $\frac{1}{2}$	7	...	41 $\frac{1}{2}$	42	...	7+7	Colorado	E. T. Logan.
53 $\frac{1}{8}$	7 $\frac{1}{8}$	...	47	49 $\frac{3}{4}$	...	8+7	Wyoming	Ford G. Barclay.
-53	...	12 $\frac{1}{2}$	...	...	...	...	Do.	The late Sir Samuel Baker.
53	8 $\frac{1}{2}$	...	29 $\frac{1}{2}$	36	38	7+6	Do.	Duke of Westminster.
53	7 $\frac{1}{2}$	...	41	43 $\frac{1}{2}$	...	6+6	Do.	Major H. J. Ferguson.
53	7 $\frac{1}{8}$	13	37 $\frac{1}{2}$	41 $\frac{1}{2}$	51	7+7	?	Hon. Walter Rothschild.
-52 $\frac{3}{4}$	7 $\frac{3}{4}$	...	38 $\frac{1}{2}$	41 $\frac{3}{4}$	...	6+5	Wyoming	Charles Makin.
52 $\frac{1}{2}$	7	...	32	43	49	7+6	Do.	J. B. Gilliat.
52 $\frac{1}{2}$	6 $\frac{1}{2}$	...	...	34 $\frac{3}{4}$	...	7+6	Do.	Ford G. Barclay.
52 $\frac{1}{2}$	6 $\frac{1}{2}$	...	39	42	...	6+6	Do.	Captain G. Dalrymple White.
52 $\frac{3}{8}$	5 $\frac{3}{4}$	...	49 $\frac{3}{8}$	...	...	6+5	Colorado	Colonel Ralph Vivian.
52	8 $\frac{1}{2}$	...	...	...	...	6+6	Wyoming	Hon. F. Thellusson.
52	6 $\frac{3}{4}$	...	29 $\frac{1}{2}$	36 $\frac{1}{2}$	...	6+5	Colorado	T. C. E. Goff.
-52	7 $\frac{1}{2}$	...	46 $\frac{1}{2}$	...	...	6+6	Do.	Dublin Museum.
52	7 $\frac{1}{2}$	...	30	33	...	6+6	Wyoming	Captain G. Dalrymple White.
52	8	...	48 $\frac{1}{2}$	49 $\frac{1}{2}$	...	8+7	Do.	Major H. C. Morland.

¹ Shot by Sir G. Gore, Bart.

TRUE WAPITI (*Cervus canadensis*)—continued.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
52	8	...	38½	44	...	8+8	Wyoming	Lord Rodney.
52	8½	...	37	40	...	6+6	Vancouver ¹	Barclay Bonthron.
52	6½	..	36	36½	41	6+4	Manitoba .	Earl of Dunmore.
-52	8½	...	...	42	...	14	Do. .	Prince Henry of Liechtenstein.
-52	7	...	30½	39	...	6+5	Washington Territory	P. B. Vander-Byl.
51½	7½	...	42	46½	...	6+6	Colorado .	Captain E. G. Verschoyle.
51½	6½	...	41	44½	...	7+7	Idaho .	H. C. Nelson.
-51½	8½	...	...	...	50	...	Wyoming	G. O. Shields.
51	7½	...	30	35	...	7+7	Do. .	J. Turner-Turner.
51	6½	...	39	45	...	6+6	Do. .	Captain E. G. Verschoyle.
-51	8½	...	...	41	...	7+6	?	Captain Joscelin Bagot.
50½	7½	...	42	48½	...	7+7	Colorado .	Colonel Ralph Vivian.
50½	7	...	36	47	...	7+6	Wyoming	Major C. F. Blane.
-50½	7½	...	...	56½	58½	7+6	Do. .	Hugh Peel.
50½	6½	...	50	43	...	6+6	Do. .	Major Maitland Kirwan.
50½	7	...	43½	43½	...	6+5	Do. .	W. Moncreiffe.
50½	6½	...	41½	47½	...	7+6	Do. .	Lieutenant-Colonel Hon. W. Coke.
50½	7½	...	35	41	...	6+6	Do. .	Hon. H. S. Somerset.
50	...	...	49	...	...	8+7	Do. .	Otho Shaw.
50	6½	...	44	44½	47	6+6	Do. .	V. Cholmondeley.
-50	...	11	...	...	...	13	Montana .	T. W. H. Clarke.
50	7½	...	39½	40	...	6+7	Wyoming	Prince Demidoff.
50	7½	...	...	47½	...	6+6	?	J. M. Hanbury.
50	8½	...	39	40	...	6+6	?	Duke of Bedford.
50	7½	..	43	40½	...	6+6	?	Duke of Portland.
50	7	...	30½	39	...	6+5	Washington	P. B. Vander-Byl.
50	6½	...	40½	36½	40	7+6	Manitoba	Major C. S. Cumberland.
-49½	6½	..	...	33½	45	6+6	?	H.R.H. the Duke of Saxe-Coburg and Gotha.

¹ West American race.

TRUE WAPITI (*Cervus canadensis*)—continued.

Length on outside curve.	Circum- ference between bez and trez.	Circum- ference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
-49½	7½	...	45½	45½	...	7+7	?	H. R. H. le Duc d'Orléans.
49½	8	...	...	43	...	11+8	Wyoming	Otho Shaw.
49½	6½	...	34½	37¾	...	6+6	Do.	J. Kenneth Foster.
49¾	7½	...	38½	...	...	15+10	Do.	Moreton Frewen.
-49½	...	9¾	28	36½	...	7+7	Canada	Paris Museum.
49½	8¾	...	38½	41½	...	6+6	Montana	L. B. Lee.
-49½	6½	...	38	46½	...	10+7	Vancouver ¹	A. E. Leatham.
49¾	6½	...	...	45	...	13	Montana	W. A. Fordham.
49	7½	...	26¾	34	41	7+6	Wyoming	J. L. Scarlett.
49	6½	...	48½	51	...	8+7	Do.	Hon. Gathorne Hardy.
49	7¾	...	33	41	...	8+5	Do.	H. Seton-Karr.
-48¾	...	11	27½	32¾	...	7+7	Canada	Paris Museum.
-48	...	11½	...	...	...	17	Montana	T. W. H. Clarke.
48	7½	...	41	40¾	...	8+7	?	Duke of Bedford.
48	6½	...	41	43	...	7+7	Wyoming	F. C. Selous.
48	6	...	40½	39	...	5+6	Do.	Captain G. J. Fitz- gerald.
47½	5¾	...	48	42	...	8+6	Colorado	E. T. Logan.
47½	7½	...	40	41	...	7+7	Wyoming	Sir Victor Brooke's Collection.
47	6½	...	40	42	...	6+6	Do.	W. W. Ashley.
-45	7½	...	37	37	...	7+8	Vancouver ¹	Clive Philipps- Wolley.

¹ West American race.

ALTAI WAPITI (*Cervus canadensis asiaticus*).

From the typical wapiti this well-marked local variety differs by its inferior size, relatively longer body and shorter limbs, and absolutely larger antlers; the general colour of the coat being yellowish tawny at all times of year. This wapiti inhabits the forest-clad portions of the Altai and Thian-Shan ranges; it was first described by Dr. Severtzoff under the name of *C. maral*, var. *asiatica*, and subsequently by Mr. Blanford, on the evidence of detached antlers obtained by the Second Yarkand Mission, as *C. eustephanus*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
¹ -55	8	...	...	...	6+7	Bought at Kashgar .	Earl of Northbrook.
-51	10- ⁹ / ₁₆	...	...	...	...	?	W. T. Blanford.
50 ³ / ₄	6	29 ¹ / ₂	38 ¹ / ₂	...	8+7	Altai . . .	Duke of Bedford.
-49 ¹ / ₈	8	41	42 ¹ / ₈	...	7+7	East Thian Shan .	Paris Museum.
48 ¹ / ₂	6 ¹ / ₂	36	33	...	6+6	Altai . . .	Duke of Bedford.
45 ¹ / ₂	6 ¹ / ₂	34 ¹ / ₂	39 ¹ / ₂	47	5+5	Do. . . .	H. J. Elwes.
43 ³ / ₄	5 ¹ / ₈	20 ¹ / ₈	35	...	6+5	?	A. O. Hume, C.P.
41 ¹ / ₂	6 ¹ / ₂	37 ¹ / ₂	40 ¹ / ₂	44	5+5	Altai . . .	H. J. Elwes.
39	4 ¹ / ₈	32	36	37 ¹ / ₂	6+6	Thian Shan . .	H. J. Elwes.

¹ Shed antlers bought by Sir Douglas Forsyth.

MANCHURIAN WAPITI (*Cervus canadensis luehdorfi*).

Antlers of a much shorter and stouter type than in the Altai wapiti, with the portion above the fourth tine (which is also relatively smaller) generally only slightly developed, and sometimes aborted. Not unfrequently "sports" in the neighbourhood of the fourth and fifth tines; and in one instance the fourth tine itself split into a regular fork. Build and colour very similar to that of the typical wapiti, but the height apparently lower. General colour in winter brownish gray, in summer light brown, with the dark winter mane and under parts of the true wapiti.

Although the antlers of this race (known in this country by the under-mentioned and other specimens in the collection of the Duke of Bedford) are at first sight very unlike those of either the Altai or the true wapiti, yet they present the essential wapiti characters. These are shown in their flatness, the preponderating size of the fourth tine, and the position of the fifth tine in the same plane as the latter. They are much more like the antlers of the West American wapiti (a fine pair of which are exhibited in the British Museum); these being relatively short and stout, with a tendency to the abortion of all the tines above the fifth, and also to the production of "sports."

As mentioned above, this deer is identified by Monsieur E. de Pousargues with *C. xanthopygus*; but there is no evidence that the coat is red in summer, and the antlers of immature specimens of the latter now living in England do not display decided wapiti characters. Moreover, these animals roar somewhat like a red deer, instead of squealing or whistling like a wapiti.

Distribution.—Northern Manchuria and Amurland.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
33½	5½	18½	21½	...	6+6	?	H. J. Elwes.
32½	5½	26½	26½	29½	7+6	?	Do.
31½	6	17	25½	29	8+7	?	Duke of Bedford.
31½	5	23½	24	26	6+6	?	Do.
31	4½	26½	25½	30½	6+5	?	Do.

Antlers of Japanese Sika.

From a specimen presented to the British Museum by Viscount Powerscourt.

JAPANESE SIKA (*Cervus sika*).

This species is the typical representative of a small group of deer in which the antlers are shorter and simpler than is usually the case in the red deer group, and have generally four tines, including a trez, but lacking a bez. The coat is spotted, at least in summer, and there is a black-bordered white area in the region of the tail, which is relatively long. In the Japanese sika the white area on the buttocks is large, and extends on to their lateral surfaces ; while the coat is chestnut red with numerous white spots in summer, and browner, with no, or only indistinct traces of, spots in winter. These deer are distributed over Northern China, Manchuria, and Japan, and are represented by two closely allied races differing chiefly in size. In the true Japanese sika (*C. sika typicus*), which inhabits Japan and Northern China, the height at the shoulder varies from about 2 feet 8 inches to 2 feet 10 inches, whereas in the Manchurian sika (*C. sika manchuricus*) it reaches

RECORDS OF BIG GAME

3 feet 3 inches. Both races have been acclimatised in English and Irish parks.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Points.	Locality.	Owner.
31½	5½	27½	4+4	Japan	Sir Edmund G. Loder, Bart.
25½	4½	20½	4+4	Do.	Do.
22	4	16½	5+4	Bred in Ireland . . .	Sir Victor Brooke's Collection.
21½	3½	16½	10+6	Island of Yezzo . . .	Do.
18½	3½	...	9	Bred in Ireland . . .	Do.
-18½	3½	11	4+4	Kobe, Japan	Dr. Percy Rendall.
16½	3½	...	4+3	Japan	British Museum.
16½	3	9½	4+3	Bred in Ireland . . .	Hon. John Ward.
15½	2½	9½	4+4	Bred in England . . .	Duke of Bedford.
¹ 15½	2½	14½	4+4	Bred in Ireland . . .	Marquis of Hamilton.
² -15½	...	...	6+5	Do.	Viscount Powerscourt.
15½	3½	12½	4+4	Do.	Hon. R. A. Ward.

¹ Weight 10 stones 3 lbs. as it fell.

This stag when killed was estimated to be fifteen or sixteen years old, and had no teeth left.

The following specimens belong to the Manchurian race.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Points.	Locality.	Owner.
-26	4½	13½	4+4	Manchuria	Paris Museum.
15½	3	...	4+4	Woburn	Duke of Bedford.

HYBRID JAPANESE and RED DEER.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Weight.	Locality.	Owner.
29½	4½	17½	21	5+4	14 st.	?	Viscount Powerscourt.
28½	4½	14½	18	5+4	14 st. clean	?	Do.
26½	4	21½	21	4+4	...	?	Do.

FORMOSAN SIKA (*Cervus taïwanus*).

Nearly allied to the Japanese and Manchurian sikas, but distinctly spotted in winter, when the coat retains more or less of the rufous summer tinge. The dark line down the middle of the back is very strongly marked, there is a more distinct black bar above the white tail-patch, and the limbs are shorter, and the body proportionately longer. The height at the shoulder is about 2 feet 11 inches. This species is confined to the mountains of the island of Formosa.

Length.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
19 $\frac{3}{4}$	3 $\frac{1}{2}$	13	16 $\frac{3}{4}$	4 + 4	Island of Formosa . .	British Museum.
19	3 $\frac{1}{4}$	...	...	4 + 4	Do. . .	Duke of Bedford.

Head of Pekin Sika, from a specimen in the Museum at Woburn Abbey

PEKIN or DYBOWSKI'S SIKA (*Cervus hortulorum*).

In addition to its larger size (at least 3 feet 7 inches at the shoulder), this species is distinguished from the Manchurian sika by the smaller size of the white tail-patch, which in fully adult individuals does not extend on to the sides of the buttocks, although it does so in younger animals. The head and neck are bluish gray, and in immature animals spots persist in the winter coat, although, except on the hind-quarters, they may disappear more or less completely at this season in fully adult bucks, whose coats become very long and shaggy, especially on the throat and neck. Hinds are more brightly coloured in winter than the stags, and retain more distinct spotting. This deer was first named by the late Consul Swinhoe from an immature buck and doe taken at the sack of the Summer Palace, Pekin, and was afterwards obtained in

the wild state in the Ussuri district of North-Eastern Manchuria, when it received the name of *C. dybowskii*.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality	Owner.
27	4½	23½	20	4+4	Manchuria . . .	Hon. Walter Rothschild.
26	3½	18	15½	4+4	Do. . . .	Edward P. Tennant.
24	4	22½	19	4+4	Do. . . .	Hon. Walter Rothschild.
23½	3½	18½	16½	4+4	Do. . . .	Duke of Bedford.
15½	3	20	..	4+4	Ussuri, South Man- churia	British Museum.

Skull and Antlers of Shou. From a specimen in the British Museum.

Head of Common Fallow Deer.

FALLOW DEER (*Cervus dama*).

Antlers normally without a bez, but with a trez tine, above which the beam is palmated, with numerous snags on the hinder edge. Coat spotted with white in summer (except in the black breed), with a black-bordered white area in the neighbourhood of the long tail. Height at shoulder about 3 feet; weight about 140 lbs. clean. The original distribution includes Greece, Spain, Portugal, Anatolia, Rhodes, Sardinia, Asia Minor, Northern Palestine, and North-Western Africa, but the species has been introduced into Great Britain and some other countries.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
¹ -31	5			30	7	?	Sir Victor Brooke's Collec- tion.
² -30	4½	23½	26½	10+9	4½	Drummond Castle, Perth	J. G. Millais.

¹ Recorded by J. G. Millais (*British Deer and their Horns*).

² Weight of antlers, 8 lbs. 1 oz. on skull, no lower jaw (Millais, *British Deer*).

FALLOW DEER (*Cervus dama*)—*continued*.

Length on out-side curve.	Circumference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
-30	4½	22	37 outside	16 + 10	7	Drummond Castle, Perth	J. G. Millais.
-29½	5	17	28½	14 + 13	7½	Petworth Park, Sussex	Do.
¹ -28½	4	14½	26	10 + 11	6	Woburn . .	Duke of Bedford.
² 28½	4	(Span 34) outside		19	6	Colebrooke . .	Sir Victor Brooke's Collection.
³ 28	4	(26)		18	5	Do. . .	Do.
⁴ -27¾	5	20½	21½	13 + 7	5¾	Do. . .	A. Basil Brooke.
27¾	4½	32½	25	11 + 10	...	Woburn . .	Duke of Bedford.
27½	4	23	...	10 + 8	...	England . .	J. Carr Saunders.
-27	...	...	...	...	...	Nr. Blair Castle .	Dowager Duchess of Atholl.
26¾	3¾	12	17½	10 + 7	...	?	British Museum.
-26½	4½	23½	20½	9 + 7	5½	Perthshire . .	A. Basil Brooke.
-26	5	20¾	23¾	10 + 10	4½	Tasmania . .	T. W. H. Clarke.
-26	5½	20	22½	11 + 13	7	Ashton Park, Lancashire	J. Whitaker.
25¾	4½	26	...	8 + 8	5½	Ireland . .	Sir Victor Brooke's Collection.
-25	4	24¾	25¾	11 + 10	5¾	Tasmania . .	T. W. H. Clarke.
-25	4½	21½	24	11 + 10	7	England . .	Sir Edmund G. Loder, Bart.
23½	3¾	14	19½	10 + 9	4½	?	G. O. M. Herron.
-23	4½	15	18½	10 + 9	5	?	Dublin Museum.
21¾	4¾	...	...	11 + 10	5	Colebrooke, Ireland	Sir Victor Brooke's Collection.

¹ Weight dressed, 165 lbs.² Seven years old, as he fell 237½ lbs., 198 lbs. cleaned.³ Seven years old, as he fell 224 lbs. (Millais, *British Deer*).⁴ Seven years old.



Head of Mesopotamian Fallow Deer, from a specimen in the British Museum.

MESOPOTAMIAN FALLOW DEER (*Cervus mesopotamicus*).

Larger and brighter coloured than the common fallow deer, with the spots near the middle of the back tending to form longitudinal stripes, and less black on the tail. Antlers of a totally different type, being somewhat expanded at the origin of the trez tine (which is large, and situated some distance above the short brow tine), but at the summit only moderately flattened, and breaking up on the hinder border into several snags.

Distribution.—The mountains of Luristan in Mesopotamian Persia.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
29	4½	30½	24½	10 + 11	5½	Asia Minor . . .	F. E. Whittall.
21½	3½	14½		9 + 7	.	Do.	Paris Museum (Père A. David).
20½	5	14		6 + 5		Luristan Mountains	Sir Edmund G. Loder, Bart.



Skull and Antlers of extinct Giant Fallow Deer (Irish Elk).

EXTINCT GIANT FALLOW DEER (*Cervus giganteus*).

(Commonly called "Irish Elk.")

A huge deer, probably standing at least 6 feet at the shoulder, with the antlers enormously expanded, and carrying several large tines on the front border, of which the one above the trez is the longest; the brow tine being often flattened and forked. In its typical form this magnificent deer occurs in the prehistoric deposits of Ireland, England, and probably some of the western districts of the Continent.

Spread Tip to Tip.		Length round inside of antler.		Length of both antlers across skull.		Circum- ference above burr.	Width of Palm.	Points.	Owner.
ft.	in.	ft.	in.	ft.	in.				
-11	3	7	5½	..	..	12½	19½	17	Mrs. Donaldson-Hudson.
-10	4½	6	9	13	10	12	20	..	Earl of Bessborough.
10	2	5	8½	..	..	9½	19½	19	British Museum.
-10	2	.	.	.	.	.	.	.	Thomas Bate.
9	8	.	.	.	.	.	.	.	Hon. Walter Rothschild.
9	5	6	2	12	5	11	21½	11 + 11	Viscount Powerscourt.
9	5	6	0	12	10	13½	21½	15 + 13	Sir Edmund G. Loder, Bart

EXTINCT GIANT FALLOW DEER (*Cervus giganteus*)—continued.

Spread Tip to Tip.	Length round inside of antler.	Length of both antlers across skull.	Circum- ference above burr.	Width of Palm.	Points.	Owner.
9 3	6 2	13 5	10	24	12 + 10	Duke of Westminster.
9 2	...	13 6	...	15½	...	Mrs. Graham Lloyd.
-9 2	...	11 10	10½	22½	9 + 9	Dublin Museum.
-9 2	...	...	...	...	20	Thomas Bate.
8 11½	6 1½	...	8½	17½	10 + 13	Hon. Charles Ellis.
8 11	5 10	...	11½	17	9 + 9	Viscount Powerscourt.
8 10	5 9	11 9½	9½	17	12 + 11	Duke of Westminster.
-8 10	...	12 10	...	13½	...	Mrs. Graham Lloyd.
-8 9	...	...	...	18½	9 + 8	H. J. Elwes.
8 7	5 9½	...	10	20	12 + 12	Viscount Powerscourt.
7 6	5 3½	...	8½	...	10 + 11	Sir Victor Brooke's Collection.

Antlers of Indian Sambar.
From a specimen in the British Museum.

INDIAN SAMBAR (*Cervus unicolor*).

The typical representative of the Rusine group of deer, in which the antlers are rounded and three-tined, both the bez and trez being wanting, and the summit of the beam simply forked. Height reaching to 5 feet 4 inches at the shoulder. Antlers large and rough, with the brow tine given off at an acute angle to the beam, and the two terminal tines of nearly equal length. Hair coarse and shaggy, uniformly dark umber-brown, with some chestnut on the buttocks, at all ages. Face-glands very large, and capable of being turned inside out. Ears large, and the tail relatively long and bushy. Young uniformly coloured. Weight about 600 lbs., when cleaned about

410 lbs. The wooded hilly districts of India and Ceylon form the habitat of the true sambar, which probably extends into Assam.

The largest, or rather longest, pair of antlers Mr. A. O. Hume ever met with were from the Central Provinces, and measured 48 inches along the curve inside (must have been nearly 50 inches on outside curve). Both brow tines were broken off. They were sent him by Mr. R. Blewitt.

Length on outside curve.	Circumference above brow tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
48	7	Single dropped horn		3	Khandesh . . .	R. H. Madan.
-46½	...	49	...	3+3	Cent. Provinces . .	R. Wordsworth.
46½	6½	24½	30½	3+3	Do. . .	A. O. Hume, C.B.
-46½	9 below brow tine	45	...	...	Gurhwal . . .	R. M. Nash.
45½	6½	17½	32½	3+3	?	The late Dr. H. Falconer, British Museum.
45	7½	22½	33½	3+3	Mayoghur, Cent. Provinces	Sir John Morris, K.C.S.I.
45	7½	44½	...	3+3	Western Ghats . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
¹ -45	...	...	...	...	Cent. Provinces . .	Bombay Natural History Society's Museum.
-45	9	...	...	...	Orissa . . .	H.H. The Maharaja of Travancore, G.C.S.I.
-45	8	Picked up by Dr. G. Jones			Cent. Provinces (?) .	Heighway Jones.
44½	7½	44½	45½	3+3	Rangeer, Do. . .	Col. W. J. Morris.
-44	...	34	...	3+3	Central Do. . .	J. D. Inverarity.
² -44	9	...	...	...	Rewa . . .	Major A. E. Ward.
44	6	9½	24½	3+3	Do. . .	Capt. C. F. Pinney.
44	6½	19½	31½	3+3	Do. . .	H. E. M. Davies.
43½	5½	Single horn		3+3	Do. . .	Hume Collection, British Museum.
43½	5½	17	28	3+3	Do. . .	Sir E. P. Bates.
43½	6½	25½	34	3+3	Cent. Provinces . .	Viscount Powerscourt.
43½	6½	20½	29½	3+3	Do. . .	Sir Robert Harvey, Bart.
-43½	10	...	...	3+3	Do. . .	Capt. C. Hutton Dowson.
-43	10½	...	...	...	Cuttack . . .	Indian Museum.

¹ This is only the measurement of a portion of a Sambar antler, and was recorded in the *Journal of the Bombay Natural History Society*, iii. p. 228. The animal was shot by Mr. R. Gilbert in the Central Provinces, but got away minus this piece of his antler.

² Height at shoulder, 35½ inches.

INDIAN SAMBAR (*Cervus unicolor*)—continued.

Length on outside curve.	Circum- ference above brow line.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
43	7½	35½	38	3+3	Gwalior . . .	Sir Greville Smyth, Bart.
43	6	24½	30	3+3	Khandesh . . .	A. Cumine.
-43	9½	26	23	3+3	Cent. Provinces . .	Capt. J. H. Gwynne.
42½	5½	26	32½	3+3	Do. . .	A. H. Pollen.
42½	6½	15	27½	4+4	Ghats of Simrol . .	Col. J. Evans, British Museum.
-42	6½	Single antler	...	...	?	Sir Edmund G. Loder, Bart.
42	6	26½	35½	3+3	Khandesh . . .	A. Cumine.
41½	6½	33½	35½	3+3	Western Ghats . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
41½	7	28½	34½	3+3	?	Hon. Walter Rothschild.
41½	7½	31½	36½	4+3	Nepal . . .	The late B. H. Hodgson, British Museum.
41½	6½	30½	36½	4+4	Cent. Provinces . .	P. Jay.
41	6½	18½	29	3+3	Do. . .	Duke of Bedford.
¹ -41	8½	...	...	3+3	N. Gujerat . . .	S. C. Law.
40½	6	22	27½	3+3	?	Sir Edmund G. Loder, Bart.
40½	7½	24½	...	3+3	?	Major James Grant.
40½	5½	33	37½	3+3	?	Hume Collection, British Museum.
40½	6½	28½	32	3+3	Nilgiris . . .	Sir Victor Brooke's Collection.
-40	...	20½	...	3+3	Asirghur . . .	J. D. Inverarity.
40	6	31½	33½	4+4	Cent. Provinces . .	H. P. Whitney.
40	5½	32½	36	3+3	Ghats of Simrol . .	Col. J. Evans, British Museum.
-39½	8	26½	...	...	Nimar . . .	Captain J. N. MacLeod.
39½	6	16½	20½	2+2	Nepal . . .	H.R.H. the Duke of Saxe- Coburg and Gotha.
-39	6	18	28	...	Satpura Range . .	Col. J. Biddulph.
-39	...	28½	30½	3+3	Asirghur . . .	J. D. Inverarity.
38½	6	26	31½	3+3	?	Viscount Powerscourt.
-38½	5½	38	29½	3+3	Girnar Hill, Kathiawar	Lieut.-Col. L. L. Fenton.
38½	6½	23½	28½	3+3	?	Sir Robert Harvey, Bart.
38½	6½	30½	35	3+3	Nilgiris . . .	Sir Victor Brooke's Collec- tion.

¹ Malformed.

INDIAN SAMBAR (*Cervus unicolor*)—continued.

Length on outside curve.	Circumference above brow line.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ -38	...	32 $\frac{3}{4}$	...	...	Mandla District, Cent. Provinces	Capt. B. H. Boucher.
-38	6 $\frac{1}{2}$	...	...	3+3	Cent. Provinces . .	H. Lennard.
38	6 $\frac{1}{2}$	29 $\frac{3}{4}$	41 $\frac{3}{4}$	3+3	Chanda District, Cent. Provinces	Sir John Morris, K.C.S.I.
38	5 $\frac{3}{4}$	28	28	3+3	?	Capt. E. H. R. Hibbert.
37 $\frac{3}{4}$	6	29 $\frac{1}{4}$	31 $\frac{3}{4}$	3+3	Cent. Provinces . .	Lieut.-Col. M. Cust.
37 $\frac{1}{2}$	6 $\frac{3}{4}$	21 $\frac{3}{4}$	25 $\frac{3}{4}$	4+3	Do. . .	Major C. S. Cumberland.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	43	31	3+3	Chanda District, Cent. Provinces	L. Gisborne Smith.
37 $\frac{1}{2}$	5 $\frac{3}{8}$	29	31 $\frac{1}{2}$	3+3	Do. . .	C. D. Twopeny.
37 $\frac{1}{2}$	7 $\frac{1}{2}$	23	29	3+3	Do. . .	Col. M. M. Bowie.
37 $\frac{1}{2}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	31	3+3	Do. . .	C. F. Egerton.
37 $\frac{3}{4}$	5 $\frac{1}{2}$	19	23 $\frac{3}{4}$	3+3	Nimar, Cent. Provinces	Lieut.-Col. H. Wade-Dalton.
37 $\frac{1}{4}$	5 $\frac{3}{8}$	19 $\frac{3}{8}$	30 $\frac{3}{4}$	3+3	Central Provinces . .	Major C. S. Cumberland.
37	5 $\frac{1}{2}$	20 $\frac{1}{4}$	28 $\frac{1}{2}$	3+3	?	M. Loam.
37	6 $\frac{1}{8}$	27 $\frac{1}{8}$	28 $\frac{3}{4}$	3+3	?	H. C. V. Hunter.
-37	6 $\frac{7}{16}$	21 $\frac{1}{4}$	24	3+3	Mount Aboo . .	Viscount Edmond de Poncins.
37	9	13	31	3+3	Mounar Valley . .	A. H. Sharp.
36 $\frac{3}{4}$	6 $\frac{1}{4}$	23 $\frac{1}{2}$	22	3+3	Rajputana . . .	Col. J. Biddulph.
36 $\frac{1}{2}$	5 $\frac{3}{4}$	24 $\frac{3}{4}$	27	3+3	Benares . . .	Sir Comer Petheram.
36 $\frac{1}{2}$	5	23 $\frac{3}{4}$	24 $\frac{1}{2}$	3+3	?	A. M. Caccia.
36 $\frac{1}{2}$	5 $\frac{3}{4}$	29	34	3+3	Nimar, Cent. Provinces	Lieut.-Col. H. Wade-Dalton.
-36	7	19	...	3+3	?	Count J. Potocki.

Ceylon Specimens.

32 $\frac{1}{2}$	6 $\frac{1}{4}$	24	26 $\frac{1}{4}$	3+3	Ceylon . . .	A. R. Hay.
31 $\frac{1}{2}$	5	20	17	4+3	Do. . .	Surgeon-Major G. E. Hale, D.S.O.
-30	8?	21 $\frac{1}{2}$	19 $\frac{3}{8}$	3+3	Do. . .	J. Ryan.
29	4 $\frac{1}{2}$	25	22 $\frac{1}{4}$	3+3	Do. . .	Earl Cairns.
27 $\frac{1}{4}$	4 $\frac{1}{4}$	16 $\frac{3}{4}$	20	3+3	Do. . .	A. M. Naylor.
-20 $\frac{3}{4}$	5 $\frac{3}{8}$	15	15	3+3	Do. . .	Dr. Percy Rendall.

¹ Height at shoulder, 52 inches.

1

Frontlet and Antlers of Malayan Sambar.
Drawn from a Burmese specimen in the British Museum.

MALAYAN SAMBAR or EQUINE DEER (*Cervus unicolor equinus*).

This local race is nearly as large as the Indian sambar, but the antlers are generally shorter and thicker, with the hinder or inner tine of the terminal fork much shorter than the front one, and arising as a spur from the inner hind margin of the beam, of which the front tine forms the direct continuation; the brow tine also generally longer. General colour of coat of adult darker, usually a light ring round the eyes, the ears smaller, often with a white margin, and the tail very bushy. Young spotted. The distributional area extends from Assam and Cachar through Burma and the Malay Peninsula to Siam, Hainan, Borneo, and perhaps Sumatra.

MALAYAN SAMBAR or EQUINE DEER (*Cervus unicolor equinus*)—
continued.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
30 $\frac{7}{8}$	6 $\frac{1}{2}$	17 $\frac{1}{4}$	19 $\frac{1}{8}$	7+7	Borneo . . .	Sir Edmund G. Loder, Bart.
-30 $\frac{1}{2}$	5 $\frac{1}{8}$	27 $\frac{3}{4}$	¹ 30	3+3	Burma . . .	Vet.-Capt. G. H. Evans.
30 $\frac{1}{8}$	4 $\frac{3}{8}$	20 $\frac{3}{4}$	21 $\frac{1}{4}$	3+3	Do. . . .	British Museum.
29 $\frac{3}{8}$	6	16 $\frac{1}{8}$	20 $\frac{3}{4}$	3+3	Garro Hills, Assam .	Hume Collection, British Museum.
-29 $\frac{1}{4}$	5 $\frac{1}{2}$	22 $\frac{1}{2}$	¹ 23 $\frac{1}{2}$	3+3	Burma . . .	Vet.-Capt. G. H. Evans.
-28 $\frac{1}{2}$	5	26 $\frac{1}{2}$	¹ 29 $\frac{1}{2}$	3+3	Do. . . .	Do.
26 $\frac{3}{4}$	6	12	13.3	3+3	Garro Hills, Assam .	Hume Collection, British Museum.
26 $\frac{1}{2}$	6 $\frac{3}{4}$	11	...	3+3	Borneo . . .	Sir Edmund G. Loder, Bart.
-26 $\frac{1}{2}$	6 $\frac{3}{4}$	24 $\frac{1}{2}$	...	3+3	Perak . . .	Perak Museum.
23 $\frac{1}{8}$	7	15 $\frac{3}{8}$	...	3+3	Borneo . . .	H. B. Low, British Museum.
19 $\frac{5}{8}$	4 $\frac{1}{4}$	16 $\frac{7}{8}$	16 $\frac{7}{8}$	4+3	Assam . . .	Hume Collection, British Museum.
16 $\frac{1}{4}$	4 $\frac{1}{4}$	5 $\frac{5}{8}$	...	3+2	Borneo . . .	W. B. Pryer, British Museum.

¹ Outside.

FORMOSAN SAMBAR (*Cervus unicolor swinhoei*).

This race is very closely related to the preceding, from which it is distinguished by its shorter head, concave profile, longer limbs, and certain differences in colour; the lower part of the legs being brownish or whitish yellow, and the bushy tail black all round. It is confined to the island of Formosa.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Points.	Locality.	Owner.
19 $\frac{3}{4}$	...	9	3+3	Island of Formosa . . .	British Museum.
16 $\frac{1}{8}$	3 $\frac{3}{8}$	16	3+3	Do. . . .	Do.
13 $\frac{3}{8}$	4 $\frac{3}{4}$	13 $\frac{1}{8}$	4+4	Do. . . .	Do.
5 $\frac{7}{8}$	2 $\frac{1}{8}$	6 $\frac{1}{4}$	3+2	Do. . . .	Do.

LUZON SAMBAR (*Cervus unicolor philippinus*).

Nearly allied to the two last, the height at the shoulder being about 28 inches, the build stout and massive, with the hind-quarters specially elevated, and the form that of a small Malayan sambar. On the head is a blackish streak starting from over each eye to form a line down the middle of the face separated by a band of pale fawn from a moustache-like dark mark in the muzzle.

Distribution.—The island of Luzon, in the Philippines; introduced into the Marianne islands, and described as a separate species under the name of *C. mariannus*.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
21	4 $\frac{3}{4}$	5 $\frac{1}{2}$	3+3	Island of Luzon . . .	Sir Edmund G. Loder, Bart.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	4+4	Do. . . .	Capt. Belcher, British Museum.
18 $\frac{1}{2}$	5 $\frac{1}{2}$	9 $\frac{3}{4}$	3+5	Do. . . .	Do.
18 $\frac{3}{4}$	5 $\frac{1}{2}$	14 $\frac{3}{4}$	4+3	Do. . . .	Do.
18	4 $\frac{3}{4}$	13	4+4	Do. . . .	Do.
16	4	10 $\frac{1}{2}$	3+3	Do. . . .	Sir Edmund G. Loder, Bart.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	11 $\frac{1}{2}$	3+3	Do. . . .	Capt. Belcher, British Museum.

BASILAN SAMBAR (*Cervus unicolor nigricans*).

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
13 $\frac{1}{2}$	4 $\frac{1}{2}$	12 $\frac{1}{2}$	3+3	Basilan Island . . .	A. H. Everett, British Museum.
13 $\frac{1}{2}$	4 $\frac{1}{2}$	11 $\frac{1}{2}$	3+3	Do. . . .	Do.

SZECHUAN SAMBAR (*Cervus unicolor dejeani*).

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
30 $\frac{3}{4}$	5 $\frac{1}{2}$	15 $\frac{3}{4}$	18 $\frac{1}{2}$	3+3	Ta-tsien-lou Szechuan	Paris Museum (type specimen).

Skull and Antlers of Javan Rusa.
From a specimen in the British Museum.

JAVAN RUSA (*Cervus hippelaphus*).

General form, coat, and colour sambar-like ; but the ears smaller the tail thin, the hairs on the back banded with coloured rings, and the under parts, chin, and inner sides of buttocks whitish. Antlers comparatively slender and only moderately rough, with the brow tine medium or short, and making a large acute angle with the beam ; the hinder or inner tine of the terminal fork much longer than the front or outer one, and forming the continuation of the beam, from the

front or front outer surface of which the front tine arises as an off-shoot; the two antlers enclosing a lyrate space. Young, uniformly coloured. There are two races of this species—one the Javan rusa (*C. hippelaphus typicus*) of the approximate size of a red deer, and the other the Moluccan rusa (*C. hippelaphus moluccensis*), from Celebes and the Moluccas, said to be smaller, and without a distinct mane on the neck or tuft to the tail.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-36	...	11½	...	3+3	Mauritius (introduced)	V.-Admiral Sir William Kennedy.
35½	4½	22½	...	3+3	Java . . .	Sir Victor Brooke's Collection.
34½	4½	17½	22½	3+3	Do. . . .	Commander C. Keppel, C.B., R.N.
¹ 34	...	...	...	...	Rodriguez (introduced)	V.-Admiral Sir William Kennedy.
33½	4½	19½	25	3+3	Java . . .	Commander C. Keppel, C.B., R.N.
33	4½	25½	...	3+3	Do. . . .	Duke of Bedford.
32	4½	19	16½	3+3	Do. . . .	The late H. J. H. Platt.
28½	4½	11½	12½	3+3	Do. . . .	Sir Edmund G. Loder, Bart.

¹ Weight 19 stone 3 lbs.

MOLUCCAN RUSA (*Cervus hippelaphus moluccensis*).

See Javan rusa above.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
36½	4½	18½	3+3	?	Sir Edmund G. Loder, Bart.
27½	4½	14½	3+3	?	Duke of Bedford.
14½	3½	...	3+3	?	Do.
8½	4	5½	...	Batchian . .	A. R. Wallace, British Museum.
6½	3½	5½	...	?	British Museum.

BAVIAN DEER (*Cervus kuhli*).

A small deer allied to the Javan rusa (*C. hippelaphus*), standing about 27 inches at the shoulder, of light build, and of a uniform brown colour, without a dark stripe down the back.

Distribution.—The Bavian Islands, between Borneo and Java.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
9½	2½	10½	10½	3+3	Bavian Islands	British Museum.

Head of Male Hog-Deer.

HOG-DEER or PARA (*Cervus porcinus*).

Allied to the Bavian deer, but the antlers larger, the build longer and lower, and the summer coat of the adult, as well as that of the young, spotted with yellowish white. General colour in winter rufous or yellowish brown, somewhat speckled above, and much darker beneath; in summer, upper parts paler and more or less spotted. Antlers on long pedicles, with the hinder tine of the terminal fork the shorter. Height at shoulder from about 25 to 29 inches. Weight about 90 to 100 lbs. The largest pair ever seen by Mr. A. O. Hume belonged to a specimen he shot in the Ganges Khadir, near Meerut. It measured 20 along the beam inside, and had a mid-beam girth of 3.5. It was destroyed in the Mutiny, the house in which it was hung, with several hundred others, having been burnt down.

Distribution.—India, throughout the Indo-Gangetic plain from Sind and the Punjab to Assam, thence through Sylhet to Burma and Tenasserim.

Length on outside curve.	Circum- ference above brow line.	Tip to Tip.	Locality.	Owner
-23½	3½	12½	Burma	Vet.-Capt. G. H. Evans.
-21½	3½	7½	Do.	Do.
-21	3½	18½	Do.	Do.

HOG-DEER or PARA (*Cervus porcinus*)—*continued*.

Length on outside curve.	Circum- ference above brow line.	Tip to Tip.	Locality.	Owner.
-21	3½	15½	Pegu . . .	Major-Gen. E. M. Norie.
-20½	3½	12½	Burma . . .	Vet.-Capt. G. H. Evans.
-20½	3½	...	Nepal . . .	Bombay Natural History Society's Museum.
-20½	4½	17½	?	J. Whitaker.
-20½	3	9½	N.W. Provinces .	J. Nugent.
-20	...	...	Burma . . .	The late Capt. R. C. Beavan, Indian Museum.
-19½	3½	16	Meerut, N.W.P. .	W. Q. Winwood.
19½	3½	13½	Dudla Swamp, N.W. Provinces	Capt. W. E. Stobart.
-19½	3½	...	Nepal . . .	Bombay Natural History Society's Museum.
-19½	...	...	Ganges Khadir .	H. S. King.
19½	3½	9½	Do. . .	A. O. Hume, C.B.
19½	3½	16½	Burma . . .	Sir Victor Brooke's Collection.
19½	3½	18½	?	H. C. V. Hunter.
-19	4½	5½	Upper Burma .	C. W. A. Bruce.
-18½	4½	15	Do. . .	Do.
1-18	6½	19	Ganges Khadir .	Col. R. Pole-Carew, C.B.
-18	...	...	?	W. Gillman.
17½	3½	9½	Nepal . . .	The late B. H. Hodgson, British Museum.
-17½	...	...	Ganges Khadir .	Major F. D. V. Wing.
17½	...	9½	India . . .	J. Carr Saunders.
-17	3½	...	Naini Tal Terai .	Major-General Alexander A. A. Kinloch.
16½	3	10½	?	British Museum.
-16½	3½	14½	Nepal . . .	A. E. Leatham.
16½	2½	8½	India . . .	The late Gen. Hardwicke, British Museum.
15½	2½	7½	Do . . .	Sir Edmund G. Loder, Bart.
15	2½	...	Laos States, Cam- bodia	A. Waley.

1 Ten points.

Head of Chital, shot by Lieut.-Col. F. H. Whitby.

CHITAL or AXIS (*Cervus axis*).

This beautiful species is distinguished from all the other members of the Rusine group, except the Philippine spotted deer (*C. alfredi*), by the body being profusely spotted with white at all seasons and all ages; the general colour of the upper parts being light rufous fawn, with a dark stripe from the nape to the tip of the tail and a black band on the muzzle. Height at shoulder from 36 to 38 inches; live-weight estimated at about 250 lbs. Antlers supported on short pedicles, long, slender, and moderately rough; the brow tine making nearly a right angle with the beam, and the front tine of the terminal fork, which forms the continuation of the beam, much the longer.

Distribution.—India and Ceylon.

CHITAL or AXIS (*Cervus axis*)—*continued*.

Length on outside curve.	Circumfer- ence above the first point.	Tip to Tip.	Points.	Locality.	Owner.
-38½	4½	19½	3+3	Asirgarh Jungle, Central Provinces	Lieut.-Col. M. Cust.
38	4½	18	3+3	East Berar . . .	Lieut.-Col. F. H. Whitby. See Illustration.
-38	...	...	...	Narbada Valley . .	The late Capt. J. Forsyth.
37½	3½	19	3+3	Siwalik Hills . . .	B. R. M. Glossop.
37½	4½	24½	4+4	Bassim, C.P. . . .	A. O. Hume, C.B.
37½	4	24½	3+3	Déhra Dún . . .	Do.
37½	4½	16½	4+5	?	Sir Victor Brooke's Collection.
36½	4½	19½	4+4	?	The late W. C. Oswell.
36½	4½	25	4+3	Berar	C. H. Seely.
-36½	4½	15½	4+3	Nepal	A. E. Leatham.
-36½	5½	19½	3+3	Central Provinces .	Capt. M. McNeill.
-36½	...	16½	4+4	Do.	Capt. J. H. Gwynne.
36	4½	25½	3+4	?	British Museum.
-36	5	15	4+3	Mysore	Vet.-Capt. G. H. Evans.
-36	4½	21	4+3	?	Major James Grant.
35½	4½	18½	4+4	?	Sir Edmund G. Loder, Bart.
35½	4	12½	5+5	?	G. W. Hatch.
35½	4½	22½	3+3	Western Ghats . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
-35½	4	21	4+4	?	James J. Harrison.
-35	4½	...	...	N. Kanara	Bombay Natural History Society's Museum.
35	4½	20½	4+3	Kota, Rajputana . .	Major H. C. Morland.
-35	...	16½	...	Mandla, Central Provinces	Capt. B. H. Boucher.
35	4	24½	3+3	Nepal	Capt. G. Roos Keppel.
-35	3½	18	...	?	W. S. Murray.
-34½	5½	12½	4+4	N.W. Provinces . .	Surgeon-Capt. E. M'K. Williams.
34½	4½	17½	...	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
-34½	...	...	...	Mirzapore	Indian Museum.
-34½	...	22½	3+3	Tapti Valley . . .	J. D. Inverarity.
-34½	3½	...	...	North Kanara . . .	Lieut.-Col. L. L. Fenton.

CHITAL or AXIS (*Cervus axis*)—*continued*.

Length on outside curve.	Circumfer- ence above the first point.	Tip to Tip.	Points.	Locality.	Owner.
34	4 $\frac{3}{4}$	16 $\frac{1}{2}$	3 + 3	?	Col. R. Pole Carew, C.B.
-34	...	...	...	?	Otho Shaw.
-34	...	29	3 + 3	Narbada Valley	J. D. Inverarity.
34	3 $\frac{1}{2}$	24	4 + 3	?	W. H. Cobb.
33 $\frac{1}{2}$	4 $\frac{3}{8}$	16 $\frac{1}{2}$	3 + 3	Central Provinces	H. Douglas Taylor.
33 $\frac{1}{2}$	4 $\frac{3}{8}$	23 $\frac{3}{8}$	4 + 5	Do.	Major C. S. Cumberland.
33 $\frac{1}{2}$	...	..	...	Ahree District, Central Provinces	Colonel F. C. Lister-Kay.
33 $\frac{1}{2}$	4 $\frac{3}{8}$	19 $\frac{3}{8}$	3 + 3	?	J. Carr Saunders.
-33 $\frac{1}{2}$	...	18	3 + 3	Central Provinces	H. St. Lennard.
33 $\frac{1}{2}$	3 $\frac{1}{2}$	18 $\frac{1}{2}$	3 + 3	?	Col. Scott Chisholme.
33 $\frac{1}{2}$	3 $\frac{7}{8}$	13	2 + 3	Yeddacurra	Sir Victor Brooke's Collection.
33 $\frac{1}{2}$	3 $\frac{7}{8}$	14 $\frac{3}{8}$	3 + 4	?	Sir James Anderson, Bart.
-33	4 $\frac{1}{2}$	16 $\frac{1}{2}$	5 + 4	?	Dublin Museum.
-33	6 $\frac{1}{8}$	22	4 + 4	Déhra Dún	Major-General Alexander A. A. Kinloch.
33	3 $\frac{1}{2}$	19 $\frac{3}{4}$	3 + 3	N.W. Provinces	Capt. Chambers Didham.
32 $\frac{7}{8}$	4 $\frac{3}{8}$	21 $\frac{1}{2}$	3 + 3	?	Hon. Walter Rothschild.
32 $\frac{3}{4}$	3 $\frac{7}{8}$	14	3 + 3	?	Sir James Anderson, Bart.
32 $\frac{1}{2}$	4 $\frac{1}{2}$	23 $\frac{3}{8}$	5 + 4	South India	Sir Victor Brooke's Collection.
-32 $\frac{1}{2}$	4 $\frac{1}{2}$	14 $\frac{1}{2}$	5 + 4	North Oudh	Major J. W. M. Cotton.
32	4	16 $\frac{1}{2}$	4 + 4	Jabalpur	A. Leslie Renton.
-31 $\frac{1}{2}$	3 $\frac{3}{4}$	17 $\frac{1}{2}$	3 + 3	Ceylon	Count Scheibler.
31 $\frac{1}{2}$	3	10 $\frac{1}{2}$	3 + 3	Do.	A. R. Hay.
30 $\frac{3}{4}$	3 $\frac{1}{2}$	20 $\frac{1}{2}$	3 + 3	Do.	Washington Singer.
30	3 $\frac{1}{2}$	15	4 + 3	Do.	Lieut.-Col. H. Wade-Dalton.
29 $\frac{7}{8}$	4 $\frac{1}{8}$	20 $\frac{1}{2}$	3 + 3	Do.	British Museum.
28 $\frac{3}{4}$	3 $\frac{1}{2}$	11 $\frac{1}{2}$	3 + 3	Do.	Capt. G. O. Bigge.
28 $\frac{1}{2}$	4 $\frac{1}{2}$	17 $\frac{1}{2}$	3 + 3	Do.	Surgeon-Major G. E. Hale, D.S.O.
27	3 $\frac{1}{2}$	8 $\frac{1}{2}$	3 + 3	Do.	Capt. Lewis Jones.
-25 $\frac{1}{2}$	3	18	3 + 3	Do.	Dr. Percy Rendall.

Side view of Antlers of Swamp-Deer. From a specimen in the British Museum.

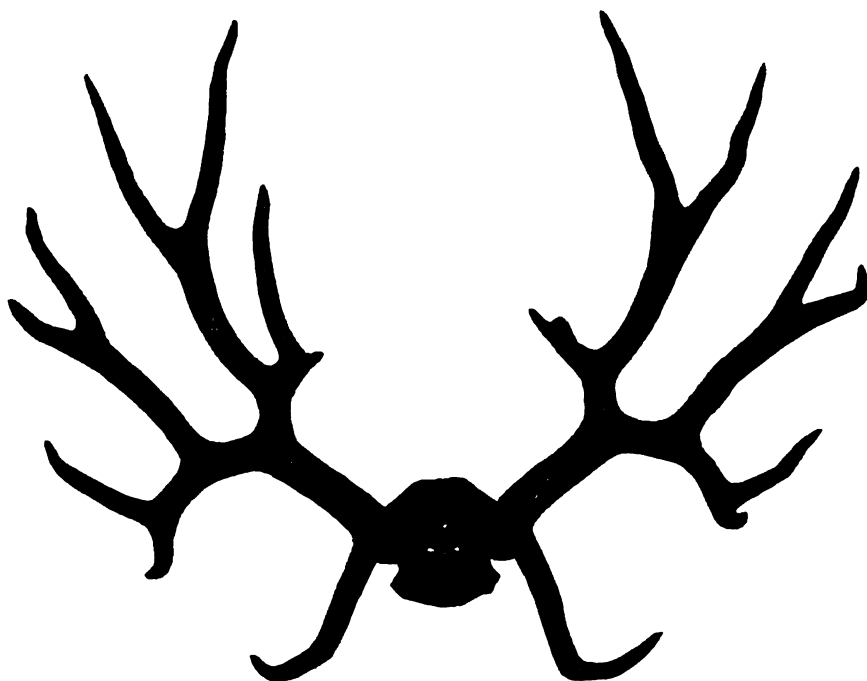
SWAMP-DEER (*Cervus duvaucali*).

This species belongs to the Rucervine group, in which the antlers resemble those of the Rusine section in the absence of the bez and trez tines, but have the beam regularly forked, and each branch again dividing, so that there are at least four tines. In the swamp-deer the antlers are smooth and flattened, with a long brow tine rising almost at right angles to the beam, which is undivided for about half the total length of the antler, and then splits into a fork, each branch of which is usually simply forked, but sometimes divided in a more complicated manner. General colour bright rufous brown, often speckled near the back. Height at shoulder from 3 feet 8 inches to 3 feet 10 inches; weight about 51 stone 3 lbs.

Distribution.—India, exclusive of Ceylon.

SWAMP-DEER (*Cervus duvauceli*)—continued.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
41	6½	35½	38	8+5	Central Provinces . .	Capt. W. W. Hancock.
41	5½	(one antler) broken		6+6	Do. . .	Do.
39½	5	35½	37½	5+6	Do. . .	Major C. S. Cumberland.
38½	5½	(shed antlers)		6+5	Do. . .	C. F. Egerton.
-38	...	43	...	6+6	Do. . .	J. D. Inverarity.
-38	...	...	...	6+6	Do. . .	Capt. B. H. Boucher.
37¾	5½	23¾	28½	7+6	?	Sir Edmund G. Loder, Bart.
36½	5	...	20 (outside)	23	Mavella District . .	Measured by Major A. E. Ward.
36	5	29¾	33¾	6+5	Nepal . . .	The late B. H. Hodgson, British Museum.
-36	...	29	...	6+6	Do. . .	J. D. Inverarity.
-35½	...	...	...	...	Chutia Nagpur . .	Indian Museum.
35¾	4½	27	29¾	...	?	Sir Victor Brooke's Collection.
35½	5½	22½	...	7+6	Nepal . . .	H. C. V. Hunter.
-34¾	...	33	...	12+8	Mymensing . . .	F. B. Simson.
-34½	5½	24½	28½	6+5	Nepal . . .	A. E. Leatham.
34½	4½	10¾	28	9+6	Mandla, Cent. Provinces	Major A. G. W. Malet.
33½	4¾	28½	32½	5+5	N.W. Provinces . .	Capt. Chambers Didham.
32¾	5½	22¾	26¾	6+5	Gowhatti, Assam . .	A. O. Hume, C.B.
32¾	5	33½	35	6+6	?	Sir Robert Harvey, Bart.
32¾	5	27½	...	7+6	Kuch Behar . . .	Major Henry Streatfeild.
32½	4½	32	33½	5+5	Central Provinces . .	Capt. E. D. White.
32½	5½	19¾	24½	7+7	Nepal . . .	H.R.H. the Duke of Saxe- Coburg and Gotha.
32	4	29	19	4+4	?	Sir H. D. Tichborne, Bart.
31	4¾	...	...	...	Herkapur . . .	Capt. J. H. Purvis.
-30¾	5	31¾	...	7+6	Raipur, Central Provinces	Capt. M. McNeill.
30½	5½	28½	32¾	8+8	Central Provinces . .	H. Douglas Taylor.
30½	4½	24¾	27	5+5	?	A. M. Caccia.



Antlers of Schomburgk's Deer. From a specimen in the British Museum.

SCHOMBURGK'S DEER (*Cervus schomburgki*).

Allied to the preceding, but the antlers smooth, rounded, and more complex; the brow tine very long, frequently forked, and arising nearly at right angles to the beam, which is very short, compressed, and regularly forked, with each of the main branches about equally developed and again forking in a similar manner to terminate in long cylindrical tines. General colour uniform dark brown. Height at shoulder about 3 feet 5 inches.

Distribution.—The northern districts of Siam.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-32 $\frac{1}{8}$	5 $\frac{1}{8}$	...	...	12+11	Siam . . .	Sir Edmund G. Loder, Bart.
30 $\frac{1}{2}$	5	15 $\frac{1}{8}$	33	10+10	Do. . . .	British Museum.
29 $\frac{1}{8}$	5 $\frac{1}{8}$	23 $\frac{1}{8}$	26 $\frac{1}{4}$	9+8	Do. . . .	Do.
29 $\frac{3}{4}$	4 $\frac{3}{4}$	28 $\frac{3}{8}$	31 $\frac{1}{8}$	10+11	Do. . . .	Do.
29 $\frac{1}{2}$	6	19 $\frac{1}{2}$	27	6+7	Do. . . .	J. Carr Saunders.
28 $\frac{1}{2}$	5 $\frac{1}{2}$	11	29 $\frac{3}{8}$	11+9	?	Sir Victor Brooke's Collection.
-28.5	5.25	9.5	28.5	10+9	Siam . . .	Indian Museum.
27 $\frac{1}{4}$	5 $\frac{3}{8}$	14	24 $\frac{1}{2}$	9+8	Do. . . .	British Museum.
27 $\frac{1}{4}$	4 $\frac{3}{8}$	18 $\frac{1}{2}$	24 $\frac{1}{4}$	8+7	Do. . . .	Do.



Skull and Antlers of Thameng. From a Burmese specimen.

THAMENG or ELD'S DEER (*Cervus eldi*).

Although belonging to the same group as the two preceding species, this deer is readily distinguished by the peculiar form of the antlers. These are rounded and rough, with a long curved brow tine, forming a continuation of the curve of the beam, which is set at right angles to the pedicle; the beam unbranched for some distance, much curved, and finally forked, with the outer prong more subdivided than the inner. Height at shoulder about 3 feet 9 inches; weight from 210 lbs. to 245 lbs. There are two races of this species. First, the Burmese thameng (*C. eldi typicus*), ranging from Manipur through Burma to the Malay Peninsula, in which the antlers are rounded throughout, and the coat is uniformly umber-brown. And, secondly, the Siamese thameng (*C. eldi platyceros*), from Siam and Hainan, in which the tips of the antlers are flattened with a number of small snags, and the coat is redder, with yellowish spots.

Length on outside curve, not including brow tine.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Length of brow tine.	Locality.	Owner.
42	5	29	24	3+2		Burma . .	A. H. Collins.
41	5½	27½	36	5+5	..	Upper Burma .	Surgeon-Major O. E. P. Lloyd.
¹ 39½	5	31½	36½	20 (small points)	15½	Siam . .	Sir Edmund G. Loder, Bart.
38½	6½	25½	30½	16+19	...	?	British Museum.

¹ Measured on front of antler from highest tip to tip of frontal tine 56½ inches.

THAMENG or ELD'S DEER (*Cervus eldi*)—*continued*.

Length on outside curve, not including brow line.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Length of brow line.	Locality.	Owner.
38½	6½	24	30½	6+5	...	Manipur . .	A. O. Hume, C.B.
38	4½	29½	36½	5+5	...	Pegu . .	G. R. Radmore.
37½	5½	20½	30½	5+5	...	? . .	British Museum.
37	4½	24½	32½	5+5	...	Burma . .	A. H. Collins.
36½	5½	28½	31½	4+3	...	Manipur . .	A. O. Hume, C.B.
35½	4½	19½	26½	4+3	...	Do. . .	Viscount Powerscourt.
35½	4½	22½	31½	6+6	...	Kyaikto, Lower Burma	J. W. Clough.
35½	6½	24	30½	6+3	18½	Manipur . .	A. O. Hume, C.B.
35	4½	30½	36	5+5	...	Lower Burma .	G. R. Radmore.
34½	5½	27½	32	6+6	...	Burma . .	A. O. Hume, C.B., British Museum.
34½	4	21½	27	6+6	...	Do. . .	Viscount Powerscourt.
34½	5	24	32½	6+6	...	Do. . .	Hon. Walter Rothschild.
34	5½	23½	29½	10+10	...	Do. . .	J. Carr Saunders.
33½	4½	17½	24½	5+4	...	Do. . .	Capt. G. H. Mockler.
33½	...	...	40	...	15	Pegu . .	Col. R. Pole-Carew, C.B.
33½	5½	33½	37½	5+5	14	Burma . .	Sir Edmund G. Loder, Bart.
33	4½	28½	32½	3+3	...	Do. . .	Sir Victor Brooke's Collec- tion.
32½	5½	20½	20½	4+3	...	Do. . .	Gen. Sir Henry Collett, K.C.B.
32	4½	18½	24½	6+5	...	Do. . .	Col. J. Biddulph.
-32	...	...	...	...	...	? . .	Maharaja of Travancore, G.C.S.I.
31½	5	25½	29½	7+6	...	? . .	The late B. H. Hodgson, British Museum.
24½	3½	19½	21½	5+5	...	Burma . .	Dr. W. P. Y. Bainbrigge.
-24	4½	18	18½	5+5	...	Do. . .	Dublin Museum.
18½	3½	12½	13½	6+5	...	? . .	The late R. Swinhoe, British Museum.
13½	3½	...	12½	6+5	...	Siam . .	British Museum.

THAMENG or ELD'S DEER (*Cervus eldi*)—continued.

Extreme length of right antler round the out- side curve, high- est point, to tip of brow line.	Circum- ference.	Tip to Tip.	Widest span.	Number of points.	Locality.	Owner.
-56½	5½	28	37	13	Burma . .	W. F. Loftus-Tottenham.
-55½	4½	34½	42½	12	Do. . .	Do.
-55	7	28½	38½	12	Do. . .	Vet.-Capt. G. H. Evans.
-55	5½	30	37	15	Do. . .	Do.
-55	5	...	42	13	Do. . .	Do.
-53½	5½	...	38	16	Do. . .	W. F. Loftus-Tottenham.
-52½	4½	24½	36½	12	Do. . .	Do.
-51½	5	...	33½	7	Do. . .	Do.
-51	5½	27	37½	10	Do. . .	Vet.-Capt. G. H. Evans.
-50½	7½	36	39½	14	Do. . .	Do.
-50½	5½	...	29½	14	Do. . .	Do.
-50½	5	30½	37	8	Do. . .	Do.
-50	5½	25½	33	12	Do. . .	W. F. Loftus-Tottenham.
-49½	6½	27	37½	9	Do. . .	Vet.-Capt. G. H. Evans.
-49½	5½	27½	36	10	Do. . .	W. F. Loftus-Tottenham.
-48½	5½	23½	36	13	Do. . .	Do.
-47½	5	...	34½	13	Do. . .	Vet.-Capt. G. H. Evans.
-46½	6	16	...	9+6	Do. . .	S. E. F. Jenkins.
-46	5½	20	30	10	Do. . .	Vet.-Capt. G. H. Evans.
-44½	5	...	23	10	Do. . .	Do.
-44	5	22	36	14	Do. . .	Do.
-43½	5½	30	33	10	Do. . .	W. F. Loftus-Tottenham.
-43½	5½	16½	27½	14	Do. . .	Vet.-Capt. G. H. Evans.
-43	4½	...	34½	12	Do. . .	Do.
-40½	4½	28	33½	9	Do. . .	Do.
-40	5½	...	40½	10	Do. . .	W. F. Loftus-Tottenham.

Frontlet and Antlers of Indian Muntjac.

INDIAN MUNTJAC or BARKING DEER (*Cervulus muntjac*).

This species is the typical representative of a genus of small Oriental deer differing widely from all those included in *Cervus*. The antlers, which do not exceed half the length of the head, have a short brow tine and an unbranched beam, and are supported on long skin-covered pedicles, continued downwards as convergent ridges on the forehead, whence the name of rib-faced deer. Tufts of bristly hair occupy the position of the antlers in the females. The muzzle has a large naked portion, and although there is generally a pair of glands on the face, there are none either on the hock or the cannon-bone. The young are spotted, but the adults uniformly coloured. In the Indian muntjac, which is one of the reddish-coloured species, and whose range extends from Ceylon and India through Burma to China, the Malay Peninsula, Sumatra, and Java, the height at the shoulder varies from 20 to 22 inches. The Chinese muntjac (*C. reevesi*), from Southern China and Formosa, is a much smaller species, also reddish in colour; but in the rare Tenasserim muntjac (*C. feae*), and the larger but equally scarce hairy-fronted muntjac (*C. crinifrons*) of Eastern China, the general hue of the body is dark purplish sepia-brown, with white on the buttocks and under surface of the tail. The average height at the shoulder is about 26 inches, and weight about 28 lbs.; a female stands about 23 inches and weighs about 32 lbs. In 1852 Mr. Wilson ("Mountaineer") had a specimen of which Mr. A. O. Hume recorded the measurements as follows: antlers round the curve outside, 9.5 and 9.0 long. In those days he did not collect horns, and only noted them.

INDIAN MUNTJAC or BARKING DEER (*Cervulus muntjac*)—continued.

Length on outside curve of antler from burr to tip.	Circumference above burr.	Tip to Tip.	Locality.	Owner.
-10 $\frac{3}{8}$	...	...	Java . . .	H. Van Son.
7 $\frac{5}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Lombok . . .	Hon. Walter Rothschild.
¹ -7 $\frac{1}{2}$	...	...	Near Mussuri . . .	Major A. E. Ward.
7 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{7}{8}$	Lombok . . .	Hon. Walter Rothschild.
-6 $\frac{3}{4}$	2 $\frac{3}{4}$	2 $\frac{1}{2}$	Perak . . .	Perak Museum.
6 $\frac{3}{4}$	2 $\frac{1}{4}$	3	Ranikhet . . .	Surgeon-Major B. W. C. Deeble.
-6 $\frac{3}{4}$	...	...	Dugshai, Punjab . . .	J. Johnston-Stewart.
6 $\frac{5}{8}$	2 $\frac{1}{4}$	3 $\frac{1}{8}$	Java . . .	J. C. Van Son.
-6 $\frac{1}{2}$	...	...	Do. . .	H. Van Son.
6 $\frac{1}{2}$	2 $\frac{5}{8}$	3 $\frac{1}{2}$	Nepal . . .	The late B. H. Hodgson, British Museum.
6 $\frac{1}{2}$	3	3 $\frac{3}{8}$	?	A. O. Hume, C.B.
-6 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{8}$	Namba Forest, Assam	Surgeon-Capt. H. S. Wood.
-6 $\frac{1}{2}$	2 $\frac{3}{4}$	...	North of Mussuri . . .	Capt. Harry V. Brooke.
6	2 $\frac{5}{8}$	4 $\frac{3}{4}$	Taroy, Burma . . .	Vet.-Capt. G. H. Evans.
-5 $\frac{1}{2}$	...	...	?	Indian Museum.
5 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{1}{2}$	Assam . . .	A. H. Straker.
5 $\frac{1}{2}$	2	2	Laos States, Cambodia . . .	A. Waley.
5 $\frac{3}{8}$	3	...	?	Col. R. J. Heber-Percy.
5 $\frac{1}{4}$	2	3 $\frac{1}{8}$	S. India . . .	Sir Victor Brooke's Collection.
5 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{8}$	Assam . . .	P. Russel.
-5 $\frac{1}{4}$	...	...	Mandla Dist., C.P. . .	Capt. B. H. Boucher.
5	3	3	Assam . . .	Major C. S. Cumberland.
-5	3 $\frac{1}{2}$	3 $\frac{5}{8}$	North Kanara . . .	Lieut.-Col. L. L. Fenton.

¹ Weight 37 lbs.**TIBETAN MUNTJAC (*Cervulus lachrymans*).**

Nearly allied to the last, but smaller.

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
2 $\frac{1}{2}$	1 $\frac{5}{8}$	3	Ningpo . . .	The late R. Swinhoe, British Museum.
-2 $\frac{1}{2}$	1 $\frac{1}{2}$	3 $\frac{1}{4}$	Do. . .	Dublin Museum.

Head of Hairy-fronted Muntjac.

THE HAIRY-FRONTED MUNTJAC (*Cervulus crinifrons*).

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
1½	..	4½	Ningpo	British Museum.

TENASSERIM MUNTJAC (*Cervulus fene*).

Antlers about two inches long.

EUROPEAN ROE (*Capreolus vulgaris*).

Roe may be recognised by the rudimentary tail, and the medium-sized antlers rising close together and almost vertically from the head, without a brow tine, and regularly forking at a point about two-thirds the total length, with the posterior prong again subdividing, so that the number of points is usually three. There is no gland and tuft on the hock, but one on the upper part of the hinder cannon-bone. In the European roe the height at the shoulder is about 26 inches. In winter the coat is dark speckly brown with a large white rump-patch, but in summer foxy red, with little or no white behind. The range embraces the greater part of Europe as far as the Caucasus, and probably Asia Minor.

EUROPEAN ROE (*Capreolus vulgaris*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
13	4	14½	Germany . . .	Viscount Powerscourt.
13	4	14½	Do. . . .	Do.
13	3½	10½	Do. . . .	Do.
-13	6½	8½	Do. . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
-13	7	10	Do. . . .	Do.
-13	6½	8	Do. . . .	Do.
12¾	3	8½	Do. . . .	Viscount Powerscourt.
12½	4	9½	Do. . . .	Do.
12½	4¾	9	Servia . . .	Do.
-12½	3¾	4½	Austria . . .	Capt. John Marriott.
¹ -12½	...	...	Perthshire . . .	R. Moncrieff.
11½	...	6	Monymusk, N.B. . .	Sir Arthur Grant, Bart.
¹ 11½	...	...	Orton, Speyside . .	Sir G. Macpherson Grant, Bart.
11½	3	8¾	Germany . . .	Viscount Powerscourt.
-11½	6	6	Perth . . .	J. G. Millais.
11½	4½	8¾	Servia . . .	Viscount Powerscourt.
-11½	4¾	...	Scotland . . .	Duke of Bedford.
-11½	4½	...	(Single antler dug up)	J. G. Millais.
11	7½	...	Ross-shire . . .	H. M. Warrand.
-11	...	7½	Aberdeenshire . .	Col. Gordon Cumming.
11	5½	7½	Ross-shire . . .	H. M. Warrand.
11	³ 8	8¾	Germany . . .	Viscount Powerscourt.
11	7½	6½	Sligo, Ireland . .	Sir Henry Gore Booth, Bart.
10½	...	...	Beaufort, Ross-shire .	J. G. Millais.
10½	6½	6	Ballindalloch . .	Sir G. Macpherson Grant, Bart.
10½	3½	5¾	Inverness . . .	C. Macpherson Grant.
10½	3½	8½	?	Major James Grant.
-10½	...	...	?	J. G. Millais.

¹ and ² Recorded by J. G. Millais (*British Deer and their Horns*).³ Abnormal (Peraque).

EUROPEAN ROE (*Capreolus vulgaris*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-10 $\frac{1}{4}$	3 $\frac{1}{8}$	Single antler 4 $\frac{1}{2}$	Dorset	A. Du Cane.
10	2 $\frac{1}{4}$	4 $\frac{1}{2}$	Ross	Sir Edmund G. Loder, Bart.
9 $\frac{3}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{2}$	Austria	H.R.H. le Duc d'Orléans.
9 $\frac{1}{2}$	8 $\frac{1}{8}$	12 points	Sligo, Ireland	Sir Henry Gore Booth, Bart.
9 $\frac{1}{8}$	5	5	Dorset	J. E. Harting.
9 $\frac{7}{8}$	3 $\frac{3}{4}$	5 $\frac{3}{4}$	Moray	Sir Victor Brooke's Collection.
9 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	?	Col. Ralph Vivian.
9 $\frac{1}{2}$	3 $\frac{1}{4}$	7 $\frac{1}{4}$	New Forest	Hon. Gerald Lascelles.
-9 $\frac{1}{4}$	5 $\frac{1}{2}$	5	Beaufort, Ross-shire	J. G. Millais.
-9 $\frac{1}{4}$	4	5 $\frac{1}{16}$	Ross-shire	Col. A. J. Warrand.
-9 $\frac{1}{4}$	3 $\frac{1}{2}$	7 $\frac{1}{16}$	Do.	Do.
9	3	6 $\frac{1}{2}$	Banff	H. Brinsley Brooke.
8 $\frac{3}{4}$	2 $\frac{3}{4}$	5 $\frac{1}{2}$	Glenrinnies	J. G. Williams.
8 $\frac{5}{8}$	3	4	Scotland	Col. Ralph Vivian.
8 $\frac{1}{2}$	6 $\frac{1}{4}$	3 antlers 4 $\frac{1}{8}$	Lissadell, Ireland	Sir Henry Gore Booth, Bart.
8 $\frac{1}{2}$	3	4 $\frac{1}{2}$	Scotland	C. C. Branch.
8 $\frac{1}{2}$	3	4 $\frac{1}{2}$	France	British Museum.
8 $\frac{1}{2}$	2 $\frac{3}{4}$	...	Islay	Capt. M. M'Neill.
-8 $\frac{1}{2}$	4 $\frac{1}{8}$	3	Scotland	C. V. A. Peel.
8 $\frac{1}{4}$	3 $\frac{5}{8}$	27 $\frac{1}{8}$	Lissadell	J. Kenneth Foster.

Head of Siberian Roe.

SIBERIAN ROE (*Capreolus pygargus*).

Larger than the last, the height at the shoulder varying from 28 to 34 inches ; the ears shorter and more hairy, the white rump-patch larger, and the antlers longer and more rugose with numerous nodose snags.

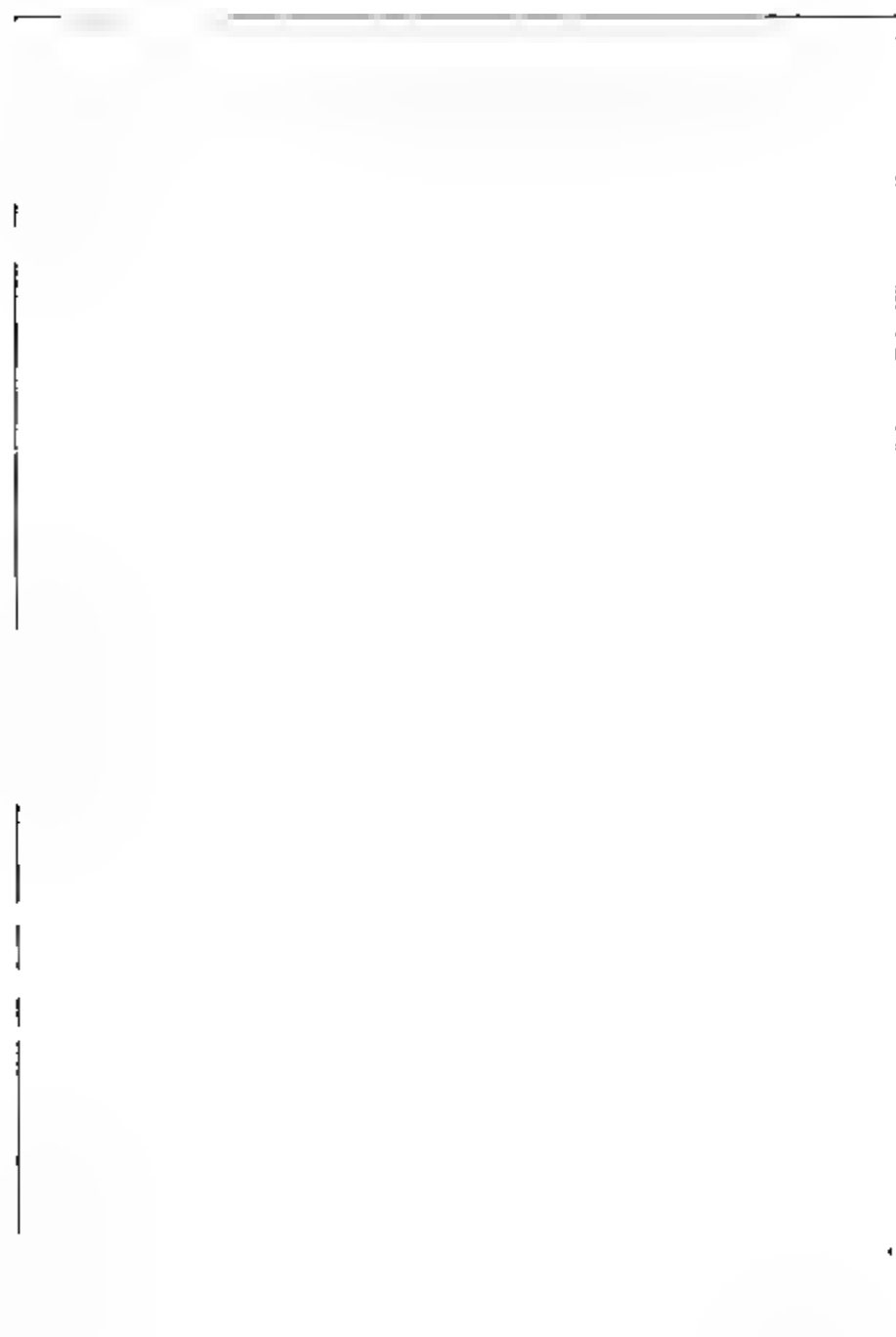
Mr. St. George Littledale says the specimens he observed barked like a "barking deer."

Distribution.—From the Altai and mountains of Turkestan to Siberia, and probably the Caspian provinces of Persia.

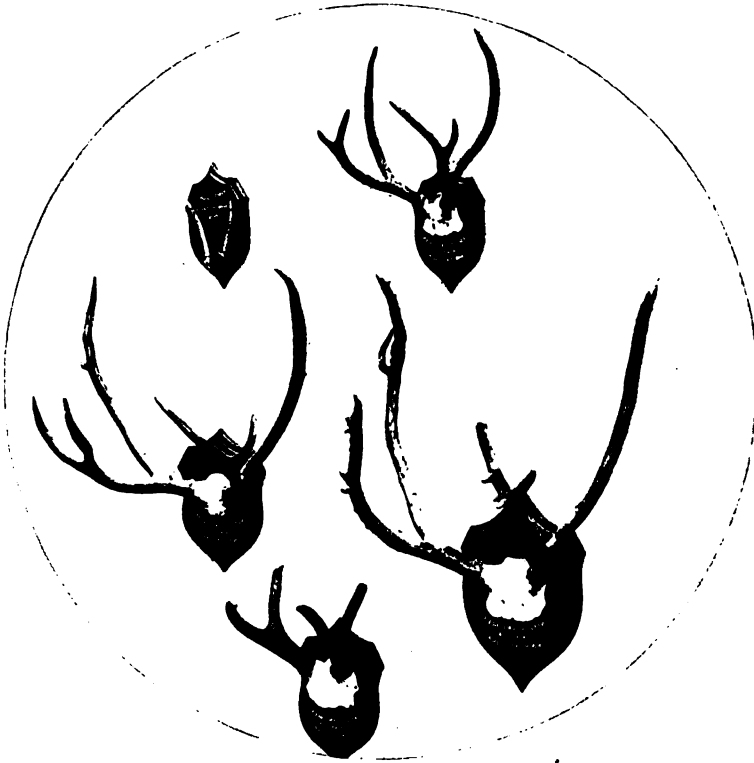
SIBERIAN ROE (*Capreolus pygargus*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-18 $\frac{9}{16}$	16 $\frac{3}{4}$	...	?	Carl Hagenbeck.
16	4 $\frac{1}{2}$	12	?	Viscount Powerscourt.
15 $\frac{1}{2}$	4 $\frac{1}{4}$	8 $\frac{1}{2}$	?	Do.
15	4 $\frac{3}{4}$	...	Siberia . . .	Sir Edmund G. Loder, Bart.
-14 $\frac{7}{8}$	3 $\frac{1}{8}$	...	Do. . . .	Paris Museum.
14	3 $\frac{1}{2}$	13 $\frac{3}{4}$	Altai, Mongolia . .	St. George Littledale. (See illustration.)
13 $\frac{7}{8}$	2 $\frac{7}{8}$	13 $\frac{5}{8}$	Semirechensk Altai .	H. J. Elwes.
13 $\frac{3}{4}$	3	6	Asia ? . . .	British Museum.
13 $\frac{3}{4}$	3 $\frac{3}{4}$	11 $\frac{1}{2}$	?	H.R.H. le Duc d'Orléans.
13 $\frac{5}{8}$	4	9	Upper Yenisei Valley .	H. J. Elwes.
13 $\frac{1}{2}$	3 $\frac{3}{8}$	8 $\frac{3}{4}$	Semirechensk Altai .	
13 $\frac{1}{2}$	3 $\frac{3}{8}$	9 $\frac{5}{8}$	Upper Yenisei Valley .	
13 $\frac{1}{2}$	4 $\frac{7}{8}$	12 $\frac{3}{4}$	Do. . . .	
13 $\frac{1}{2}$	3 $\frac{1}{2}$	11 $\frac{1}{4}$	S. Siberia . . .	W. A. L. Fletcher.
13 $\frac{5}{8}$	3 $\frac{1}{8}$	9 $\frac{1}{2}$	Siberia . . .	Paris Museum.
13 $\frac{1}{4}$	4	9 $\frac{1}{2}$	Do. . . .	Duke of Bedford.
13 $\frac{1}{4}$	4	8 $\frac{7}{8}$	S. Manchuria ² . .	H. E. M. James, British Museum.
13 $\frac{1}{4}$	3 $\frac{7}{8}$	9 $\frac{1}{2}$	Upper Yenisei Valley .	H. J. Elwes.
13 $\frac{1}{4}$	4 $\frac{7}{8}$	14	Do. . . .	Do.
12 $\frac{3}{4}$	3	7 $\frac{3}{4}$	Semirechensk Altai .	Do.
12 $\frac{1}{2}$	3	6 $\frac{3}{4}$	?	H.R.H. le Duc d'Orléans.
12 $\frac{5}{8}$	3 $\frac{1}{2}$	7 $\frac{1}{4}$	Caucasus . . .	H. J. Elwes.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	3	?	Duke of Bedford.
11 $\frac{5}{8}$	4	8 $\frac{1}{8}$	Manchuria ² . . .	British Museum.

¹ Circumference of burr.² These probably belong to the somewhat smaller Manchurian Roe.



Skull and Antlers of Siberian Roe shot by St. George Littledale.



Antlers of Père David's Milou Deer at Different Ages.
From specimens at Woburn Abbey.

PÈRE DAVID'S MILOU DEER (*Elaphurus davidianus*).

This remarkable deer differs from all the preceding, except the roes, by the absence of a brow tine to the antlers, which are large and branching, the beam forking at a comparatively short distance above the burr, and the front prong of the fork again dividing, while the hind prong is long and straight. The bushy tail is longer than in any other deer, and the neck of the male is maned. There is a gland-tuft on the upper half of the hind cannon-bone, but none on the hock. In the adult the colour is uniformly tawny, but spotted in the young. Height at shoulder about 3 feet 9 inches.

Distribution.—Northern China ; probably unknown in the wild state.

PÈRE DAVID'S MILOU DEER (*Elaphurus davidianus*)—*continued*.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
32 $\frac{7}{8}$	6 $\frac{3}{8}$	13 $\frac{5}{8}$	18 $\frac{1}{2}$	8 + 8	Near Pekin . .	Sir Edmund G. Loder, Bart.
30 $\frac{3}{4}$	5	35 $\frac{1}{16}$	35 $\frac{1}{8}$	11 + 10	Imperial Park, Pekin	Paris Museum (Type Specimen), Père A. David.
28 $\frac{1}{2}$	5 $\frac{3}{8}$	26 $\frac{1}{2}$	...	3 + 3	?	Hon. Walter Rothschild.
27	5 $\frac{1}{8}$	20 $\frac{1}{2}$	...	6 + 5	?	British Museum.
¹ 25	5	...	...	6 + 4	Bred in England .	Duke of Bedford.
22	4 $\frac{5}{8}$	...	...	4 + 3	Do. . .	Do.

¹ Back point of this head measured 28 inches from beam of antler.



Antlers of Virginian Deer. From a specimen in the British Museum.

COMMON AMERICAN or VIRGINIAN DEER (*Mazama americana*).

With the exception of the wapiti and elk, all the deer of America are distinguished from those of the Old World, save the roe and milou deer, by the absence of a brow tine to the antlers, which are either regularly forked or spike-like, and quite different from those of either the roe or milou deer. In the Virginian deer they are large and complex, with a long sub-basal snag, and the front prong of the main fork developed at the expense of the hinder, and carrying a number of snags on its upper surface. Tail long. A gland-tuft on the hock, and a small cylindrical white one with a black centre near the lower end of the hind cannon-bone. Colour of upper parts chestnut in summer and bluish gray in winter, with the under surface of the tail and the buttocks pure white. Typically from Eastern North America, where the height at the shoulder reaches to 3 feet 1 inch, but represented by numerous races in other parts of the Continent, which gradually decrease in size and complexity of antlers towards the south, where they extend to Peru, Bolivia, and Guiana. Weight, 12 st. 7 lbs. (F. C. Selous). Commonly called white-tailed deer.

COMMON AMERICAN or VIRGINIAN DEER (*Mazama americana*)—
continued.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27½	5½	Single antler	...	16	N. America . . .	British Museum.
27½	4½	14½	19	6+6	Do. . . .	Do.
26¾	4½	9½	20	20	Do. . . .	Major James Grant.
25¾	4½	9	19	11	Maine	H. S. Wellcome.
25½	4½	10½	19	15+13	Texas	Capt. F. Cookson.
25½	4½	12½	17½	11+9	N. America . . .	British Museum.
24½	4½	12½	18½	6+6	Do. . . .	J. Carr Saunders.
24½	4½	11½	19½	6+6	Do. . . .	British Museum.
-24	4½	¹ 19½	...	18	Nebraska . . .	G. B. Grinnell.
-23¾	6	12	16¾	5+4	Wyoming . . .	James J. Harrison.
23	5	5	16	6+6	B. Columbia . . .	J. Turner-Turner.
-22½	4	¹ 15¾	...	12	Medora, N.D. . .	Theodore Roosevelt.
21½	3½	3½	13½	4+4	New York State . .	Sir Edmund G. Loder, Bart.
21	5	18½	19	4+4	?	L. C. R. Messel.
19½	4½	12	15	5+5	Wyoming	F. C. Selous.
19½	3½	12½	15½	5+5	B. Columbia . . .	T. P. Kempson.
17¾	4½	...	...	27+25	Do. . . .	Moreton Frewen.
¹ ♀ 12½	4	8	...	3+3	Do. . . .	J. Turner-Turner.

¹ Spread.

MEXICAN DEER (*Mazama americana mexicana*).

One of the smaller races of the preceding, the height at the shoulder being about 2 feet 9 inches, and the antlers smaller and simpler.

Distribution.—South Mexico.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
13½	3½	6½	11½	3+3	Mexico . . .	British Museum.
8½	3½	6	6½	3+3	Do. . . .	Sir Edmund G. Loder, Bart.
8½	2½	4½	6½	3+4	Do. . . .	Sir Victor Brooke's Collection.



Head of Mule-Deer. From a specimen in the possession of E. S. Cameron.

MULE-DEER (*Oreamnos hemionus*).

Antlers with a much shorter sub-basal snag than in the Virginian deer, beyond which the beam is directed outwards for a short distance, and then curves upwards to form a regular fork, both prongs of which are usually equal, and generally subdivide so as to form five points on each side. Ears very large and heavy; tail moderate, terminating in a bush-like tuft. Gland-tufts on hock and cannon-bone coloured like the leg; the latter of these elongated and situated in the upper half of the cannon-bone. General colour of upper parts reddish tawny in summer, brownish or rufous speckled gray in winter, with a brown

horse-shoe mark on the forehead. Height at the shoulder, 3 feet 3 or 4 inches in the typical form. Weight, 17 stone 2 lbs. (F. C. Selous).

Distribution.—The greater part of North America westward of the Missouri, extending from British Columbia to California. There are several local races, among which the South Californian (*M. hemionus peninsulae*) is one of the smallest.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
30	5 $\frac{3}{4}$	...	41	17	White River, Colorado	H. A. James.
28 $\frac{3}{8}$	4 $\frac{1}{2}$	13 $\frac{1}{4}$	17 $\frac{3}{4}$	5+5	Wyoming . .	Ford G. Barclay.
28 $\frac{1}{2}$	5	18 $\frac{3}{4}$	21	6+4	British Columbia .	J. McL. M'Iver Campbell.
28 $\frac{1}{2}$	...	...	24 $\frac{1}{2}$	...	White River, Colorado	Major Maitland Kirwan.
27	5 $\frac{1}{4}$	19 $\frac{1}{2}$	21 $\frac{3}{8}$	6+5	North America .	Sir Edmund G. Loder, Bart.
27	5 $\frac{1}{4}$	19 $\frac{1}{2}$	22 $\frac{3}{4}$	5+5	British Columbia .	D. H. Crake.
-26 $\frac{7}{8}$	5	...	...	35	North Dakota .	Theodore Roosevelt.
-26 $\frac{3}{4}$	...	...	...	26	?	W. A. Baillie-Grohman.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	19 $\frac{3}{8}$	20 $\frac{1}{8}$	5+5	Wyoming . .	Ernest Farquhar.
26 $\frac{1}{2}$	5	15 $\frac{1}{2}$	18 $\frac{1}{2}$	6+5	British Columbia .	T. P. Kempson.
26 $\frac{1}{2}$	5 $\frac{3}{4}$	...	17 $\frac{1}{2}$	12	Wyoming . .	Hon. F. Thellusson.
26 $\frac{1}{8}$	4 $\frac{3}{8}$	15 $\frac{7}{8}$	22 $\frac{7}{8}$	6+6	Do. . .	Capt. F. Cookson.
26	4 $\frac{1}{2}$	20	21 $\frac{3}{4}$	7+5	Do. . .	The MacLaine of Lochbuie.
26	5	15 $\frac{1}{4}$	19 $\frac{1}{2}$	4+4	British Columbia .	J. V. Colby.
-25 $\frac{3}{8}$	5 $\frac{1}{2}$	14 $\frac{3}{4}$	28	11+8	Frazer River, B.C. .	A. E. Leatham.
25 $\frac{1}{2}$	5 $\frac{1}{2}$	...	21 $\frac{1}{2}$	8	Do. . .	Sir Peter Walker, Bart.
-25 $\frac{1}{2}$	4 $\frac{3}{4}$	...	...	28	Montana . .	P. Liebing.
25 $\frac{1}{2}$	4 $\frac{3}{8}$	18	24 $\frac{1}{4}$	5+5	Colorado . .	E. T. Logan.
25 $\frac{1}{2}$	4 $\frac{1}{4}$	27	29	5+5	Wyoming . .	Capt. G. J. Fitzgerald.
25 $\frac{3}{8}$	4 $\frac{1}{8}$	19	20	5+5	Do. . .	A. H. Pollen.
25	5 $\frac{1}{4}$	27 $\frac{3}{8}$	27 $\frac{3}{8}$	16+13	Montana . .	Moreton Frewen.
25	5	20 $\frac{3}{4}$	24	5+5	Wyoming . .	J. L. Scarlett.
25	5	10	16 $\frac{3}{4}$	5+4	Do. . .	F. C. Selous.
-25	5 $\frac{3}{4}$	17 $\frac{1}{2}$	21 $\frac{1}{2}$	7+5	Do. . .	James J. Harrison.
24 $\frac{1}{2}$	5 $\frac{1}{4}$	...	23 $\frac{1}{2}$	10	Maine . .	H. S. Wellcome.

MULE-DEER (*Mazama hemionus*)—continued.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.		Locality.	Owner.
24½	5½	..	25	10	Wyoming . . .	T. W. H. Clarke.
24½	5	19	24	5+5	Do. . . .	F. C. Selous.
24	5	13¾	17	10	British Columbia .	T. P. Kempson.
24	4½	20½	20	6+5	Do. . . .	R. Rankin.
24	4½	19½	25½	5+5	Wyoming . . .	Capt. J. M'Call Maxwell.
24	4½	15¾	19½	5+5	Do. . . .	Count E. Hoyos.
23½	7	18	21	26	British Columbia	J. Turner-Turner.

Head of Mule-Deer. From a specimen shot by J. McL. M'Iver Campbell.

BLACK-TAILED DEER (*Mazama columbiana*).

Nearly allied to the mule-deer, but of inferior size, with relatively smaller ears and finer hair; but specially characterised by the shorter gland and tuft on the hind cannon-bone, and the larger amount of black on the tail, of which only the basal third of the lower surface is white.

Distribution.—Western North America, from British Columbia to California.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27 $\frac{3}{4}$	6	15 $\frac{1}{4}$	19 $\frac{1}{4}$	9+6	British Columbia .	G. Wrey.
-22	4 $\frac{1}{4}$	...	¹ 22	...	Vancouver .	Clive Philipps-Wolley.
-20 $\frac{1}{4}$	5	17	17	5+7	Do. .	A. E. Leatham.
19 $\frac{1}{4}$	4 $\frac{1}{4}$	14	16 $\frac{1}{2}$	3+3	S. California .	Sir Victor Brooke's Collection.

¹ Outside.

Malformed Marsh-Deer Antlers.

MARSH-DEER (*Mazama dichotoma*).

Antlers without a sub-basal snag, forking regularly, with both prongs again dividing, and the upper one usually more complex than the lower. Ears large, with white hair internally. Hair long and coarse, reversed on the withers for a short distance. General colour of upper parts bright rufous chestnut in summer, browner in winter; legs black from the knees and hocks downward. No tuft on cannon-bone. Size, approximately that of a red deer. Although ten is the usual number of points, sports are common.

Distribution.—From Brazil to the inner wooded districts of Argentina.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality	Owner.
24½	5	16	18	5+5	Chaco of Paraguay .	Vice-Admiral Sir William Kennedy.
23½	6½	26	25	5+5	?	Sir Edmund G. Loder, Bart.
23½	5½	15½	16½	5+4	S. America .	British Museum.
23½	6	...	19½	12	Do. .	G. R. Stuart.
22½	6½	20	20½	5+5	Brazil .	Sir Victor Brooke's Collection.
22½	7½	..	15½	6+6	Argentina .	Kenyon Slaney.

MARSH-DEER (*Mazama dichotoma*)—continued.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
22½	5½	25	...	28	Argentina . .	A. Vans-Agnew.
21½	5½	22	16½	6+6	Paraguay . .	S. Pulley.
21½	5	12½	16	5+5	Do. . .	Vice-Admiral Sir William Kennedy.
21½	...	19½	..	6+5	Entre Rios . .	T. Taylor.
20	5½	20	..	4+4	Paraguay . .	Count Henry Coudenhove.
20	6½	19½	18½	4+4	Uruguay . .	Staff-Surgeon J. Dowson, R.N.
17½	4½	11	..	10	Paraguay . .	Hon. Walter Rothschild.

Side view of Antlers of Marsh-Deer. From a specimen in the British Museum.

PAMPAS DEER (*Mazama bezoartica*).

A small deer nearly allied to the last, but with the front prong of the antlers simple, and the hinder one divided. A whorl in the hair on the middle of the back and another at the base of the neck, so that the fur of the withers is directed forwards for a considerable distance. Colour of upper parts light reddish brown, under parts and lower surface of tail white; upper surface of latter black.

Vice-Admiral Sir William Kennedy, in his *Sporting Sketches of South America*, thus describes it:—"The gama is of a light buff colour, carries a pretty symmetrical pair of horns, generally six points, but emits so strong an odour as to be called the stinking deer. Height at shoulder, 2 ft. 6 in."

Distribution.—Brazil to Northern Patagonia, in open districts.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
14 $\frac{1}{2}$	2 $\frac{1}{2}$	13 $\frac{1}{2}$	3+3	Argentina	British Museum.
14 $\frac{1}{2}$	3	11	3+3	South America	Sir Edmund G. Loder, Bart.
14	4 $\frac{1}{2}$	11 $\frac{1}{2}$	3+3	Paraguay	Vice-Admiral Sir William Kennedy.
13	2 $\frac{1}{2}$	12 $\frac{1}{2}$	3+3	?	W. Livingstone Learmonth.
12 $\frac{1}{2}$	3 $\frac{1}{2}$	7	12+11	Uruguay	J. Burnett.
12 $\frac{1}{2}$	2 $\frac{1}{2}$	8 $\frac{1}{2}$	3+3	?	Sir Victor Brooke's Collection.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	13 $\frac{1}{2}$	3+3	?	The late Charles Darwin, British Museum.
10 $\frac{1}{2}$	2 $\frac{1}{2}$	13 $\frac{1}{2}$	3+3	North Patagonia	British Museum.
10	2 $\frac{1}{2}$	12 $\frac{1}{2}$	3+3	Argentina	Count Henry Coudenhove.
7 $\frac{1}{2}$	2 $\frac{1}{2}$	5 $\frac{1}{2}$	3+3	?	Duke of Bedford.

PERUVIAN GUEMAL (*Mazama antisienensis*).

Together with the closely allied Chilian guemal (*M. chilensis*), this species constitutes a group characterised by the antlers forming a single fork, of which the front prong is the smaller, and curves upwards towards the hinder one. There is no gland-tuft on the hind cannon-bone, the short tail is rather bushy, and the hair coarse and brittle.

Distribution.—The high Andes, from Peru to Northern Chili.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
9 $\frac{1}{2}$	7 $\frac{1}{2}$	4 $\frac{1}{2}$	Tinta, South Peru	H. Whitely, British Museum.
9 $\frac{1}{2}$	2 $\frac{1}{2}$	8 $\frac{1}{2}$	Ceuchepate, Peru (11,000 ft.)	Do.

WOOD BROCKET (*Mazama nemorivaga*).

The brockets are some of the smallest deer included in the genus *Mazama*, of which they are the typical representatives. They are recognisable by their simple spike-like antlers, the tufted crown of the head, and the radiation of the hair of the face from two whorls, which causes that on the nose to be directed downwards. The present species is distinguished by its small size (height at shoulder about 19 inches), its pale pepper-and-salt brownish or gray colour, the streak on the forehead, and the absence of a gland and tuft on the hock.

Distribution.—Guiana, Colombia, Bolivia, Brazil, and Trinidad.

Length on front of horn.	Girth.	Tip to Tip	Locality.	Owner.
—4 $\frac{5}{8}$	3 $\frac{1}{4}$	4	Trinidad	Dr. Percy Rendall.

MUSK-DEER (*Moschus moschiferus*).

From all living deer except the Chinese water-deer this species is distinguished by the absence of antlers, whose function as weapons is discharged in the male by long upper tusks. The tail is rudimentary, the fur coarse and brittle, and the lateral hoofs are very large. The males have a glandular pouch which secretes the musk from which the species takes its name. Height at shoulder about 20 inches, at rump 22 inches.

Distribution.—The forest districts of the Himalaya as far west as Gilgit, at elevations of 8000 feet or more in summer, to Tibet, Siberia, and Western China.

Length of Tusk.	Locality.	Owner.
—3 $\frac{1}{2}$	Himalaya	J. Johnston-Stewart.
3	Gurhwal	A. O. Hume, C.B.
3	Amurland	British Museum.
2 $\frac{3}{4}$	Himalaya	Rowland Ward.
2 $\frac{1}{2}$	Do.	Dr. Percy Rendall.
2 $\frac{1}{4}$	Kashmir	Sir Edmund G. Loder, Bart.
2 $\frac{3}{8}$	Do.	Major A. Nugent.

A. H. Neumann's Northern Giraffe Skull. From De Winton, *P.Z.S.* February 1897.

NORTHERN GIRAFFE (*Giraffa camelopardalis*).

Ihuhla of the Swazis.

Indhlulamiti of the Zulus.

Tuthla of the Basutos.

Ngabe of the Masawaras.

Giri or *Halgiri* of the Somalis.

Kameel of the Boers.

The long and stilted limbs, the peculiarly-formed head, and the dappled hide, render giraffes distinguishable at a glance from all other living ruminants; with none of which they have, indeed, any very close affinity, although their nearest relatives are the deer. So great are their distinctions, that they constitute a family by themselves—the *Giraffidæ*. For many years it was supposed that this family was represented only by a single species; but it is now ascertained that the North and South African giraffes are markedly distinct from one another; the difference being apparently sufficient to admit of their being regarded as species. As a family characteristic, one of the most marked peculiarities of the giraffes is to be found in the horns. These consist of a pair of bony processes arising from the head between the ears, and covered during life with skin. They are never shed; and in the adult are immovably united to the bones of the skull, although separate in young animals. In addition to these, there is a more or less distinct third horn, or boss, situated on the forehead between the eyes. Giraffes have a long, extensile tongue, hairy lips,

and broad, low-crowned molar teeth. There are no tusks in the upper jaw ; and the false hoofs are likewise wanting.

In the present species the third horn is well developed, measuring from three to five inches in height in old bulls. The ground-colour of the coat varies from white to fawn ; the orange-red or reddish chocolate dark blotches having sharply defined edges, with the spaces between them generally narrow and distinctly demarcated, even in old individuals. Beneath the knees and hocks the legs are white in typical examples.

Distribution.—From the Tana river northwards through the Galla country and Somaliland to Abyssinia, Kordofan, and thence probably across Africa, in suitable districts to Senegambia from about Lat. 15° N. to the Equator. An unusual tall female giraffe from Nigeria has been regarded as indicating a western race of this species, under the name of *G. camelopardalis peralta*. The giraffes of Nyasaland and the Kilimanjaro districts have been described by Dr. P. Matschie as distinct species, but their right to separation stands in need of confirmation.

SOUTHERN GIRAFFE (*Giraffa capensis*).

In the southern giraffe the third horn, even in old bulls, is so reduced in size as scarcely to merit that name at all. The ground-colour of the coat varies from white to dull fawn ; and the dark blotches, which may be either dun or deep coffee colour, always have the centre darker than the edges, and the latter irregular and not sharply defined, so that in the adult the intervening light spaces are broad. In young individuals, however, the skin shows very clearly defined white lines between the dark blotches, forming a conspicuous network pattern ; the margin of the blotches receding with age. In size, the species appears very similar to the last ; and in both kinds the old bulls become much darker than the cows or immature males.

Distribution.—Within the last half century this species has ranged from the Orange to the Zambesi rivers. Northward of this latter river on the eastern half of the continent, at least, no giraffe is found for about 12 degrees ; but north of the Rufizi river they again appear and continue through German East Africa, reaching westward to Lake Tanganyika, and occurring east of the Mari escarpment and south of the Tana river in British East Africa (De Winton).

SOUTHERN GIRAFFE (*Giraffa capensis*)—continued.

Total height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
-18 7	...	South-East Africa . .	F. Vaughan Kirby.
¹ -18 0	12 0	South Africa . . .	The late Sir W. Cornwallis Harris.
-17 6	Average height	South-East Africa . .	F. Vaughan Kirby.
♂ 17 0	...	W. Matabeleland . .	F. C. Selous.
♀ 16 6	...	N. Kalahari . . .	Do.
-♀ 15 6 to 16 0	Average height	South-East Africa . .	F. Vaughan Kirby.

NORTHERN GIRAFFE (*Giraffa camelopardalis*).

Total height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
-16 0	...	Central East Africa . .	A. H. Neumann.

¹ *Portraits of the Game and Wild Animals of Southern Africa.*

Head of Male Prong-horn.

PRONG-HORN (*Antilocapra americana*).

Although commonly termed an antelope, this animal differs from all the members of the *Bovidae* by the forking of the horns. These are annually shed from their bony sheaths and replaced by a new pair, which commence to grow up beneath the old ones before they are cast off. In consequence of this difference the species represents a family (*Antilocapridæ*) by itself. Horns generally absent in the female. Ears long and pointed, tail short, and neck maned. General colour chestnut, with a white rump-patch, and white bars on the neck. Height at shoulder, 36 inches; weight, 70 to 80 lbs. clean.

Distribution.—Western United States, from British Columbia to Mexico.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
-17½	6½		9	N.W. Canada . . .	J. Whitaker.
-17	.		20 outside	"	Otho Shaw.
-16	6½		.	N. Dakota . . .	Theodore Roosevelt.
15½	6½	5½		Wyoming . . .	St. George Littledale.

PRONG-HORN (*Antilocapra americana*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
-15 $\frac{3}{4}$	5 $\frac{1}{8}$	...	20 outside	?	Otho Shaw.
-15 $\frac{5}{8}$	6	2 $\frac{7}{8}$	...	Teton Mountains . . .	H. Lennard.
15 $\frac{1}{2}$	4 $\frac{1}{2}$	9 $\frac{1}{2}$	...	Wyoming . . .	W. R. Cookson.
-15 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	...	Do. . .	Count E. Hoyos.
15 $\frac{5}{8}$	6 $\frac{1}{4}$	7 $\frac{5}{8}$	...	?	Col. Ralph Vivian.
15	5 $\frac{5}{8}$	5 $\frac{3}{4}$	10 $\frac{1}{4}$	Wyoming . . .	St. George Littledale.
14 $\frac{7}{8}$	5	5 $\frac{1}{4}$	...	New Mexico . . .	Capt. F. Cookson.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	12	...	?	C. F. Bengough.
-14 $\frac{1}{2}$	...	...	12 $\frac{1}{2}$	Wyoming . . .	T. W. H. Clarke.
14 $\frac{1}{2}$	6	...	9 $\frac{1}{2}$	Laramie Plains, Wyoming.	Ford G. Barclay.
14 $\frac{1}{2}$	6 $\frac{5}{8}$	5 $\frac{1}{4}$	...	Wyoming . . .	Lieut.-Col. Hon. W. Coke.
14 $\frac{1}{4}$	5 $\frac{5}{8}$	6 $\frac{1}{4}$	10	Do. . .	Count Scheibler.
14 $\frac{1}{4}$	6	2 $\frac{5}{8}$	...	?	Sir Victor Brooke's Collection.
14 $\frac{1}{4}$	7	4 $\frac{1}{4}$	...	?	J. McL. M'Iver Campbell.
14	5 $\frac{1}{2}$	10 $\frac{1}{4}$	...	Wyoming . . .	F. C. Selous.
14	5 $\frac{3}{4}$	13 $\frac{3}{4}$	...	Colorado . . .	E. T. Logan.
14	6	6 $\frac{5}{8}$	...	Wyoming . . .	Sir Peter Walker, Bart.
14	6	3 $\frac{1}{4}$	...	Do. . .	J. B. Gilliat.
14	5 $\frac{1}{2}$	9 $\frac{1}{4}$	...	?	J. Carr Saunders.
13 $\frac{5}{8}$	5 $\frac{1}{4}$	4 $\frac{5}{8}$	...	Wyoming . . .	W. W. Ashley.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{3}{4}$	...	Do. . .	Capt. Hugh Fraser.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	7	...	Do. . .	Capt. G. J. Fitzgerald.
13	5 $\frac{1}{2}$	4 $\frac{5}{8}$	...	Do. . .	Capt. J. M'Call Maxwell.
13	5 $\frac{1}{2}$	...	5 $\frac{1}{2}$	Do. . .	Crawford G. Logan.
13	6 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Colorado . . .	Sir Edmund G. Loder, Bart.
13	6 $\frac{1}{2}$	8 $\frac{1}{2}$	9	Wyoming . . .	Dublin Museum.

Horns of Bubaline Hartebeest. From Julius Jeppe's specimen.

BUBALINE HARTEBEEST (*Bubalis boselaphus*).

This species brings us to the great family of hollow-horned ruminants, or *Bovidae*, in which the horns are in the form of unbranched hollow sheaths, which are never shed, and are supported on bony cores. The hartebeests are large antelopes with naked muzzles, abnormally long faces, doubly curved horns, small face-glands, large valvular nostrils (of which the lower lids are covered with short hairs), long, tufted tails, and large lateral hoofs. The present species is the smallest of the group, standing only 43 inches at the shoulder. It has a short pedicle supporting the horns, which are in the form of the letter W, and the colour is uniform tawny, with the tail-tuft black.

Distribution.—Northern Africa (interior of Morocco, Algeria, and Tunisia) and Arabia.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality	Owner.
14½	8½	9½	North Africa	British Museum.
14½	6½	9½	"	Col. Ralph Vivian.
13¾	9½	9½	Tunisia	Julius Jeppe.
13½	7	5½	North Africa	British Museum.

Horns of West African Hartbeest. Shot by J. W. Carroll.

WEST AFRICAN HARTEBEEST (*Bubalis major*).

Closely related to the preceding animal, of which, when fully known, it may turn out to be merely a local race with more massive horns. Body said to be of a uniform grayish brown, face deep brown, the fore-legs streaked with dark brown or blackish from the knees downwards, and the tail-tuft black.

Distribution.—Gambia, Lower Nigeria, and the interior of the Cameroons.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25½	11½	12½	Nigeria . . .	P. A. Clive.
25½	12½	11½	Yauri, Hausa States	J. W. Carroll. (See illustration.)
25½	12½	13½	Near Borgu . . .	Capt. N. C. Welch.
25	11½	10½	Benue River . . .	Julius Jeppe.
23½	11½	22½	Yauri, Hausa States	J. W. Carroll.
23.5	12.5	malformed 6	Togoland . . .	Berlin Museum.
23	12½	9½	Niger Sudan . . .	Hon. Walter Rothschild.
22	11	19½	Ibi, Nigeria . . .	Capt. A. H. Festing.
21½	12½	malformed 8½	Near Borgu . . .	Capt. N. C. Welch.

WEST AFRICAN HARTEBEEST (*Bubalis major*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ 21½	12½	...	Lokoja . . .	Capt. C. A. Wilding.
21½	10½	13¾	Do. . . .	Capt. A. H. Festing.
21½	12	12½	Gambia . . .	H. L. Stephen.
-21½	11	9½	Do. . . .	Paris Museum.
21	11	9½	Lokoja . . .	Col. F. D. Lugard, C.B., D.S.O.
21	12	11	Do. . . .	F. H. Barber.
21	11½	10¾	Do. . . .	A. Ohlsson.
20¾	10½	7	Nigeria . . .	British Museum.
20	11	10½	Do. . . .	Mr. Justice Hopley.
♀ 20	9½	6	Lokoja . . .	A. W. M. Brodie.
-19¾	11½	10¾	Gambia . . .	Dr. Percy Rendall.
♀ 19¾	9	6½	Lokoja . . .	F. H. Barber.
♀ 19	8½	13	Nigeria . . .	Major A. J. Arnold, D.S.O.
♀ 18	8½	14	Do. . . .	Hon. Walter Rothschild.
♀ 18	9	7	Lokoja . . .	The late Dr. Higgs.
♀ 17½	8¾	7½	Benue River . .	Julius Jeppe.
♀ 17½	9	5½	Lokoja . . .	Col. F. D. Lugard, C.B., D.S.O.

¹ Height at shoulder, 54 inches.

Frontlet and Horns of Tora Hartebest. Shot by Lieut.-Col. Hon. W. Coke.

TORA or TETEL HARTEBEEST (*Bubalis tora*).

Horn-pedicle of medium length, the horns themselves in the form of an inverted bracket (—). Height at shoulder about 48 inches. Colour uniformly pale tawny fulvous, with the exception of the tail-tuft and chin, which are black. Although of the same uniform colour, this species is easily distinguished from *B. boselaphus* by its superior size, higher gait, and differently shaped horns.

Distribution.—Upper Nubia, Northern Abyssinia and Kordofan.

Length on front curve.	Circum- ference.	Tip to Tip	Locality	Owner.
21	9	19½	Sudan	Lieut.-Col. Hon. W. Coke. (See illustration.)
20½	9½	14½	Do.	Hon. Walter Rothschild.
20	9½	15½	Do.	British Museum.
20	9½	14½	Lake Zuay, Abyssinia .	Prince de Lucinge.
19½	■	16½	Dombelas, Abyssinia .	British Museum.
19½	9	13½	Do.	Sir Victor Brooke's Collection.
18½	8½	15½	Sudan	Col. Ralph Vivian.
18½	...	16½	Upper Basalam River, Abyssinia	J. Menges.
18½	8½	11½	Nubia	Julius Jeppe.
18	8½	14½	Settite River	W. D. James.
17½	9½	■	Bogos-land, Abyssinia .	British Museum.

TORA or TETEL HARTEBEEST (*Bubalis tora*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
17	9½	13½	Settite River . . .	W. D. James.
♀ 14½	6½	5½	Sudan . . .	Hon. Walter Rothschild.
♀ 14½	6½	18	Upper Nubia . . .	Julius Jeppe.
♀ 13½	6½	14	Do. . .	Sir Edmund G. Loder, Bart.
♀ 13½	..	14½	Abyssinia . . .	J. Menges.

Head of Tora Hartebeest.

Head of Female and Skull of Male Neumann's Hartebeest.

NEUMANN'S HARTEBEEST (*Bubalis tora neumanni*).

Nearly allied to the typical *tora*, but distinguished by the stouter horns, on which the rings are less distinct and do not extend so far round, and the generally richer coloration. The horns are also less divergent. Mr. Walter Rothschild, the describer of this form, gives the following particulars:—

Colour of hair fulvous fawn, much richer on the back, where there are also some darker spots, which may be stains or natural; below very much paler. Chin blackish, tip of tail black. The male is brighter and darker in colour than the female. There are also on the back some patches with longer, thicker, almost whitish-buff hair, perhaps remains of the winter fur.

Description.—East Africa, in the neighbourhood of Lake Rudolph.

Discovered by A. H. Neumann.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
16½	10½	8½	N.E. of Lake Rudolph . . .	A. H. Neumann.
♀ 13½	7½	9½	E. shore of Lake Rudolph .	Do.
♀ 13½	7½	10	?	Lord Delamere.

Head of Swayne's Hartbeest. Shot by Major H. G. C. Swayne.

SIG or SWAYNE'S HARTEBEEEST (*Bubalis swaynei*).

Sig of the Somalis.

Korkei of the Gallas.

Horn-pedicle and horns of the same general type as in the last species. Height at shoulder about 47 inches ; weight about 300 lbs. General colour pale chocolate-brown, with white tips to the hairs ; face black, except the muzzle and a line between the eyes ; shoulders and upper part of fore-legs, as well as a patch on upper part of hind-legs, also black.

Distribution.—Interior of Northern Somaliland and Shoa ; in Somaliland it is found on the dry plateau known as the *hawl*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	8½	26½	Somaliland .	Major H. G. C. Swayne.
19½	9½	22½	Do. . .	G. H. Cheetham.
-19½	...	24½	N. Somaliland .	J. Menges.
-19	9½	18½	Do. . .	Capt. M. M'Neill

SIG or SWAYNE'S HARTEBEEST (*Bubalis swaynei*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{3}{4}$	9 $\frac{1}{4}$	16	N. Somaliland .	Ford G. Barclay.
18 $\frac{1}{2}$	9 $\frac{1}{4}$	19 $\frac{1}{4}$	Do. .	T. W. Greenfield.
18 $\frac{3}{8}$	8 $\frac{3}{4}$	18	Do. .	Major H. G. C. Swayne.
-18	8 $\frac{3}{4}$	10 $\frac{3}{4}$	Do. .	Count J. Potocki.
18	9	22	Do. .	B. R. M. Glossop.
17 $\frac{3}{4}$	11	17	Galla Country .	Viscount Edmond de Poncins.
17 $\frac{3}{4}$	8 $\frac{3}{4}$	21	Somaliland .	Count J. de Bylands.
17 $\frac{3}{4}$	10	21 $\frac{1}{2}$	Do. . .	E. Lee Townshend.
17 $\frac{3}{4}$	10	20	Do. . .	Digby Davies.
17 $\frac{1}{2}$	8 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . .	T. W. H. Clarke.
17 $\frac{1}{2}$	9 $\frac{1}{4}$	19	Do. . .	Sir Edmund G. Loder, Bart.
17 $\frac{1}{2}$	9	21 $\frac{3}{4}$	Do. . .	J. J. Richardson.
17 $\frac{1}{2}$	10	21 $\frac{3}{4}$	Do. . .	Capt. J. M'Call Maxwell.
17 $\frac{1}{2}$	9 $\frac{3}{4}$	21	Do. . .	H. A. Bryden.
-17 $\frac{1}{2}$	9	19 $\frac{1}{2}$	Do. . .	C. V. A. Peel.
17 $\frac{1}{4}$	8 $\frac{1}{2}$	21	Do. . .	Major C. F. Blane.
-17 $\frac{1}{4}$	8 $\frac{1}{2}$	19 $\frac{1}{8}$	Do. . .	J. Johnston-Stewart.
-17 $\frac{1}{4}$	...	...	Do. . .	Major George Douglas.
-17 $\frac{1}{8}$	10 $\frac{1}{16}$	18 $\frac{1}{8}$	Abyssinia .	Prince A. de Lucinge.
17	9	10	Somaliland .	W. W. Ashley.
17	9	20 $\frac{3}{4}$	Do. . .	J. Byng Paget.
17	9 $\frac{1}{2}$	19	Do. . .	Sir H. D. Tichborne, Bart.
17	8 $\frac{3}{4}$	15 $\frac{1}{2}$	Do. . .	Capt. George Campbell.
17	9 $\frac{1}{2}$	18 $\frac{1}{2}$	Do. . .	R. M'D. Hawker.
-17	9	17	Do. . .	A. E. Pease.
17	8 $\frac{3}{4}$	17 $\frac{1}{2}$	Do. . .	Capt. F. C. Quicke.
16 $\frac{1}{2}$	9	12 $\frac{1}{4}$	Do. . .	W. R. Bindloss.
-16 $\frac{1}{2}$	9 $\frac{1}{2}$	15 $\frac{3}{4}$	Do. . .	Paris Museum.
16 $\frac{1}{2}$	10	16	Do. . .	J. Kenneth Foster.
16 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{3}{4}$	Do. . .	Hon. Walter Rothschild.

SIG or SWAYNE'S HARTEBEEST (*Bubalis swaynei*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner
16½	10½	16	Somaliland .	E. T. Marshall.
16½	9	17½	Do. . .	W. D. James.
16½	8½	20½	Do. . .	Lord Delamere.
16	8½	18	Do. . .	H.R.H. le Duc d'Orléans.
16	9½	17½	Do. . .	Prince Nicolas Ghika.
16	8½	15	Do. . .	Capt. C. S. Timins.
16	9	18½	Do. . .	R. Wahrmann.
16	10	16½	Do. . .	J. Benett-Stanford.
♀ 15½	6½	19	Do. . .	Count J. de Bylands.
♀ 15½	7	11½	Galla Country .	Viscount Edmond de Poncins.
- ♀ 15½	..	...	N. Somaliland .	J. Menges.
- ♀ 13½	7	19	Somaliland .	C. V. A. Peel.

KONGONI or COKE'S HARTEBEEST (*Bubalis cokei*).

Horn-pedicle moderate, horns bracket-shaped, very short and thick. Height at shoulder about 45 inches. General colour uniform bright fawn, with the lower lip somewhat browner, and the lower part of the rump paler; tail long, with the black tuft ascending some way up the hinder surface.

Distribution.—Eastern Africa, from Usagara northwards to Kilimanjaro and Masailand. This hartebeest is named after Lieut.-Col. Hon. W. Coke, by whom it was first killed. A bull shot by Capt. R. A. J. Montgomerie, C.B., R.N., in Masailand weighed 312 lbs.

Mr. F. J. Jackson says: "This hartebeest ranges as far north as L. Naivasha, south into German territory and east to within a few miles of the coast at the back of the Shimba hills."

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	..	...	East Africa . . .	Julius Jeppe.
19½	10	18½	Do. . . .	J. Gardiner Muir.
19	9½	16	Do. . . .	Sir Robert Harvey, Bart.
19	10½	14	Do. . . .	Berlin Museum.
18½	8½	16½	Do. . . .	F. J. Jackson, C.B.
18½	10½	18	West of Mombasa . .	C. W. Hobley.

KONGONI or COKE'S HARTEBEEST (*Bubalis cokei*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18½	9½	13½	East Africa . . .	H. C. V. Hunter.
-18	7½	12½	Masailand . . .	Count Scheibler.
-17½	8½	15½	East Africa . . .	Do.
17½	9½	11	Do. . . .	J. Carr Saunders.
17	9½	12	Do. . . .	Lord Delamere.
17	9½	13½	Machakos . . .	Col. F. D. Lugard, C.B., D.S.O.
17	8½	14½	East Africa . . .	S. L. Hinde.
16½	8	12½	Do. . . .	British Museum.
16½	9	17½	Do. . . .	Sir Victor Brooke's Collection.
16½	8½	13½	Kilimanjaro . . .	Sir John Kirk, K.C.B.
16½	10½	13½	?	C. Steuart Betton.
16½	10	15	?	Julius Jeppe.
16	9½	12	East Africa . . .	E. Gedge.
15½	8½	10½	Taita	J. Wray, British Musuem.
15½	10½	11½	?	Sir Edmund G. Loder, Bart.
♀ 15½	7½	12½	East Africa . . .	S. L. Hinde.
♀ 13	6½	13	?	Lord Delamere.

Horns of Cape Hartebeest. F. H. Barber's specimen.

CAPE HARTEBEEST (*Bubalis cama*).

Khama of the Bechuanas. *Ingama* of the Makalakas.

Horn-pedicle greatly elongated, horns forming a letter V when viewed from the front. Height at shoulder about 48 inches. General colour brownish fulvous, darker than in any of the preceding; face (except between the eyes), back of neck, chin, shoulders, thighs, and tail, black or blackish; lower portion of buttocks with a conspicuous whitish or yellowish blaze, forming a marked contrast to the other colours.

Distribution.—South Africa southwards of the Limpopo, but extending farther northwards along the confines of the Kalahari desert. This fleet and handsome species (the *roi hartebeest*) is now nearly exterminated in the Cape, although still found in the Transvaal. A few still linger in the old Bushman country in the north-west of Cape Colony. Although practically exterminated in the Orange Free State and in most of the Transvaal (except to the north-west), numbers of hartebeest are to be found in the pleasant country—partly plains, partly open forest—of British Bechuanaland and the Bechuanaland Protectorate. In the North Kalahari and the desert regions about the Botletli River big troops are to be met with. This hartebeest is an extremely good sporting animal, remarkably fleet and enduring, and not by any means easy to bring to bag. Its flesh is very palatable, and its brilliant coat is much sought after by the native tribes.

CAPE HARTEBEEST (*Bubalis cama*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-25	...	...	Orange Free State .	F. H. Barber. (See illustration.)
25	11	10	?	C. Rube.
-24 $\frac{7}{8}$	11	7	Nata River . .	H. M. Barber.
24 $\frac{1}{2}$	12	9 $\frac{1}{2}$	South Africa . .	C. D. Rudd.
-24 $\frac{3}{8}$	10 $\frac{1}{4}$	9 $\frac{1}{8}$	Damaraland . .	Th. Rehbock.
-24 $\frac{1}{4}$	11	7 $\frac{7}{8}$	South Africa . .	Julius Jeppe.
23 $\frac{3}{4}$	10	8 $\frac{3}{8}$	Do. . .	The late Sir Andrew Smith, British Museum.
-23 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{7}{8}$	Do. . .	Julius Jeppe.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	9 $\frac{7}{8}$	Do. . .	Hon. Walter Rothschild.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	10 $\frac{1}{2}$	Khama's Country .	F. C. Selous.
23 $\frac{1}{4}$	10 $\frac{3}{8}$	8 $\frac{1}{8}$	Makari Kari Salt Pan	The late J. S. Jameson.
23	12	5 $\frac{1}{2}$	South Africa . .	G. Richards.
23	11 $\frac{1}{4}$	6	Do. . .	F. C. Selous.
23	11	11	Do. . .	A. Beit.
-22 $\frac{1}{2}$	11	8 $\frac{1}{2}$	Do. . .	A. Ohlsson.
22 $\frac{1}{2}$	10 $\frac{3}{4}$	10 $\frac{3}{8}$	Do. . .	Sir Edmund G. Loder, Bart.
22 $\frac{1}{4}$	11 $\frac{1}{2}$	8	Do. . .	A. Moseley.
22 $\frac{1}{4}$	12 $\frac{1}{4}$	6 $\frac{1}{8}$	Do. . .	Major R. Hayes Sadler.
-22 $\frac{1}{16}$	13	11	Do. . .	Paris Museum.
-22	11 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . .	Dublin Museum.
22	10 $\frac{3}{8}$	8 $\frac{1}{8}$	Do. . .	Sir Victor Brooke's Collection.
-♀ 20	...	...	Orange Free State .	Cape Town Museum.
-♀ 19 $\frac{7}{8}$	7 $\frac{1}{4}$	11 $\frac{1}{16}$	Damaraland . .	Th. Rehbock.
♀ 19 $\frac{3}{4}$	7 $\frac{1}{2}$	9	South Africa . .	The late J. S. Jameson.
♀ 19 $\frac{1}{2}$	8 $\frac{3}{8}$	8 $\frac{1}{4}$	Do. . .	G. Richards.
♀ 19	8 $\frac{1}{2}$	6 $\frac{1}{2}$	Kalahari. . .	H. A. Bryden.

Skull and Head of Jackson's Hartebeest.

JACKSON'S HARTEBEEST (*Bubalis jacksoni*).

Generally similar to the preceding, but without the black blaze on the face, and with the horns less abruptly bent backwards from above. Other differences may be found to exist when the coloration of the body becomes fully known.

Distribution.—The interior of British Central Africa, north of Lake Baringo, Uganda, and probably northwards to the White Nile and westwards to Congoland.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
24½	10½	11½	East Central Africa . . .	F. J. Jackson, C.B.
24	10½	6½	Do. . . .	Do.
23½	12	9	Do. . . .	E. Gedge.
23½	11½	6½	North End of Lake Albert	Col. Trevor Ternan.
23½	11½	10½	Rangata Nyuki	Major A. E. Smith.
23	11½	8½	E. C. Africa	Sir Edmund G. Loder, Bart.
22½	10½	11½	E. of Victoria Nyanza . .	Paris Museum.

JACKSON'S HARTEBEEST (*Bubalis jacksoni*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality	Owner.
22½	10½	10½	E. C. Africa	Capt. E. J. Tickell.
22½	10½	11	E. of Victoria Nyanza	Col. F. D. Lugard, C.B., D.S.O.
22	11	11	E. C. Africa	T. E. Buckley.
21	10½	9½	Do.	Julius Jeppe.
20½	11½	7½	Do.	Capt. E. J. Tickell.
19½	11½	7½	Do.	Lord Delamere.
♀ 18½	8	5½	Uganda	Col. Trevor Ternan.
♀ 16½	8	9½	E. C. Africa	F. J. Jackson, C.B.
♀ 16½	8½	9½	Do.	Julius Jeppe.
♂ 16½	7½	4½	Do.	Mr. Justice Hopley.

Skull and Horns of Hybrid Hartebeest. Shot by Major C. H. Villiers.

HYBRID HARTEBEEST (presumed between *Bubalis cokei* and *jacksoni*).

Length on front curve.	Circum- ference.	Tip to Tip.	Locality	Owner.
19½	10½	9½	Lake Naraku	J. Ponsonby.
18½	10	9	Mau Plateau	Major C. H. Villiers.
17½	9½	9½	West of Eldoma Ravine	G. E. Smith.

Head of Lichtenstein's Hartbeest.

LICHTENSTEIN'S HARTEBEEST (*Bubalis lichtensteini*).

Horn-pedicle very short and broad, and the horns themselves much curved inwards towards one another below the terminal backward inclination. Height at shoulder about 50 inches, weight about 300 lbs. General colour tawny fulvous, becoming more rufous along the back, with the chin, tail-tuft, and front of cannon-bones black.

Distribution.—East Africa north of the Sabi River, throughout Nyasaland and Mozambique to Usagara.

Godonko of Zambesia.

Inkulando of the Mashonas.

Kokotombwi in Barotseland.

Konze in the Chilala and Chibisa countries.

Ngondo in the Chinyanja.

LICHTENSTEIN'S HARTEBEEST (*Bubalis lichtensteini*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-22 $\frac{7}{8}$	11	7 $\frac{7}{8}$	?	Mr. Justice Hopley.
-22 $\frac{3}{4}$	...	...	Nyasaland	F. Watkinson.
-21 $\frac{3}{4}$	10 $\frac{3}{4}$	9	?	Mr. Justice Hopley.
21 $\frac{1}{2}$	12 $\frac{1}{2}$	9	Batoka Plateau	F. Smitheman.
-21 $\frac{1}{2}$	...	...	Batokaland	R. T. Coryndon.
21	12 $\frac{1}{4}$	8 $\frac{3}{4}$	Barotseland	H. Timmins.
-21	...	...	?	O. R. Dunell.
-20 $\frac{3}{4}$	12 $\frac{3}{8}$	7 $\frac{3}{8}$	Portuguese East Africa .	F. Vaughan Kirby.
-20 $\frac{3}{4}$	...	...	?	Julius Jeppe.
20 $\frac{5}{8}$	13	6	Fort Johnstone, B.C.A. .	C. C. Bowring.
-20 $\frac{1}{16}$	11 $\frac{1}{8}$	7 $\frac{1}{16}$	British Central Africa . .	A. S. Hamilton.
20 $\frac{1}{8}$	12 $\frac{1}{4}$	10 $\frac{1}{4}$	Congo Free State	Julius Jeppe.
20	12 $\frac{3}{8}$	8	Wami River, East Africa .	Sir John Kirk, K.C.B.
20	13 $\frac{1}{4}$	8	Fort Hill, B.C.A. . . .	John Yule.
19 $\frac{1}{2}$	11 $\frac{1}{2}$	8 $\frac{1}{8}$	S.E. Africa	Hon. Walter Rothschild.
-19 $\frac{1}{2}$	11 $\frac{3}{4}$	8 $\frac{1}{2}$	British Central Africa . .	F. Vaughan Kirby.
19 $\frac{1}{4}$	10 $\frac{3}{8}$	6 $\frac{3}{8}$	East Africa	Sir John Kirk, K.C.B.
19	12	4 $\frac{1}{4}$	Liwondes, B.C.A. . . .	C. C. Bowring.
19	11 $\frac{3}{4}$	5 $\frac{1}{4}$	Pungwe	J. W. Allen.
19	11 $\frac{1}{2}$	4 $\frac{7}{8}$	East Africa	British Museum.
-18 $\frac{7}{8}$	11 $\frac{1}{2}$	7 $\frac{3}{4}$	Barotseland	F. Aitkens.
18 $\frac{3}{4}$	12	5 $\frac{3}{4}$	Batoka Plateau, Northern Rhodesia	F. Smitheman.
18 $\frac{3}{4}$	12	8 $\frac{1}{4}$	Barotseland	Major H. J. Goold-Adams, C.B., C.M.G.
18 $\frac{3}{8}$	11 $\frac{3}{8}$	3 $\frac{1}{8}$	Manica Plateau	F. C. Selous.
18 $\frac{1}{2}$	12 $\frac{3}{4}$	4 $\frac{3}{4}$	Pungwe	Hon. T. Thynne.
18 $\frac{1}{2}$	10 $\frac{1}{4}$	5	S.E. Africa	F. C. Selous, British Museum.
18 $\frac{1}{2}$	13 $\frac{1}{2}$	6	E. Mashonaland	A. Neilson.
18 $\frac{1}{2}$	13	2 $\frac{1}{2}$	Songwe, Nyasaland . . .	James Yule.
18 $\frac{1}{4}$	12	8	Pangani, East Africa . .	General Sir Lloyd W. Matthews.

LICHTENSTEIN'S HARTEBEEST (*Bubalis lichtensteini*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18½	11½	5½	Wami River, East Africa .	F. J. Jackson.
18½	12	6½	Pungwe	R. K. Micklethwait.
-18½	12	6½	Beira	Dr. Percy Rendall.
18	12	3¾	British Central Africa . .	J. E. Gough.
-18	12¾	8¾	Nyasaland	Major P. W. Forbes.
-18	...	...	Beira	Cape Town Museum.
-18	12½	6	East Central Africa . .	James J. Harrison.
17½	11¾	5½	Pungwe	C. C. Gouldsmith.
17½	12	6½	Do.	H. R. Holden.
-17½	11	3½	Do.	A. M. Naylor.
-17¾	11¾	9½	East Africa	Paris Museum.
17½	12½	3¾	Maskanala	Hon. K. Campbell.
17	12¾	5½	Pungwe	Capt. F. H. Lehmann.
17	11	4¾	Lower Shiré	Staff-Surgeon J. Dowson, R.N.
17	10	4¾	East Africa	Dublin Museum.
-17	11½	5½	Pungwe	Julius Jeppe.
-17	8½	2½	Do.	A. Ohlsson.
16½	11½	6½	River Sabi, Mashonaland .	F. C. Selous, British Museum.
♀ 15	8½	4½	Do.	Do.
-♀ 15	7½	5½	Portuguese East Africa .	F. Vaughan Kirby.
♀ 12½	7	5½	?	Julius Jeppe.

Head of Hunter's Hartbeest. From a specimen shot by H. C. V. Hunter.

HUNTER'S HARTEBEEEST (*Damaliscus hunteri*).

With this species we come to a group of antelopes closely allied to the true hartebeests, but in which the frontal region is not elevated into a horn-pedicle, while the horns themselves form in most cases a lyrate or simple curve, and the face is of medium length. In the present species the slender horns are indeed doubly curved, although without the sudden angulation of the true hartebeests. They slant upwards and outwards, then bend downwards, while their long points are

directed upwards. Colour uniform rufous, with a chevron on the face, the inner surface of the ears, and the tail-tuft white. Height at shoulders about 4 feet, and the build light and graceful.

Distribution.—Southern Somaliland to north bank of Tana River.

Discovered by H. C. V. Hunter in 1888.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
26 $\frac{1}{4}$	22	8 $\frac{1}{8}$	12 $\frac{1}{2}$	Bank of the Tana River, East Africa	Sir Robert Harvey, Bart.
24 $\frac{7}{8}$	...	8 $\frac{1}{8}$	15 $\frac{1}{2}$	Do.	H. C. V. Hunter.
24 $\frac{5}{8}$	21 $\frac{1}{4}$	8 $\frac{3}{8}$	9 $\frac{3}{4}$	Do.	Sir Robert Harvey, Bart.
♀ 21	...	5 $\frac{3}{4}$	7	Do.	F. H. Barber.
20 $\frac{1}{8}$	...	5 $\frac{5}{8}$	8 $\frac{7}{8}$	Do.	Hon. Walter Rothschild.

Head of Korrigum.

KORRIGUM or SENEGAL HARTEBEEEST (*Damaliscus corrigan*).

Horns with a single slightly lyrate curve. Size medium. General colour reddish, with patches on the face, shoulders, upper part of fore-legs, hips, and thighs, and the tail-tuft black; no dark markings on back and feet.

Distribution.—Senegambia and the interior of West Africa. Discovered by Col. Denham and Capt. Clapperton in 1822-24.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22½	8½	11½	Gambia . . .	Julius Jeppe.
21½	9½	15½	Do.	Paris Museum.
21½	9½	11½	Do.	Dr. P. Rendall, British Museum.
19	6½	10	Do.	Late Earl of Derby, British Museum.
18½	9½	11	Do.	Do.
15½	7	8	Do.	Dublin Museum.

TIANG (*Damaliscus corrigan tiang*).

Apparently only a local race of the korrigum, from which it is distinguished, so far as at present known, by its slightly inferior dimensions, and certain differences in the black markings on the face and limbs.

Distribution.—Sennar, Kordofan, and Bahr-el-Ghazal.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 20½	6½	6½	Bahr-el-Ghazal . .	The late Consul Petherick, British Museum.
10½	6½	7½	Do.	Do.

Head of Topi. From a specimen shot by A. H. Neumann.

TOPI (*Damaliscus corrigum jimela*).

The southern representation of the last, distinguished by its still smaller size (height at shoulder, 43-44 inches), shorter and more slender horns, and the somewhat brindled appearance of the coat, due to patches of longer hairs on the otherwise short fur. General colour a peculiar purple-brown, with the dark markings less defined and less black than in *D. corrigum typicus*. Weight about 250 lbs.

Distribution.—British East Africa from the Juba to the Sabuki River, and thence to Uganda and Unyamwezi.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner
21	8	6½	North End of Lake Rudolph	H. Andrew.
19½	6½	3½	East Africa	H. C. V. Hunter.
19	7½	8	Do.	Rowland Ward.
18½	8½	6½	North End of Lake Rudolph .	A. H. Neumann.

TOPI (*Damaliscus corrugum jimela*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18½	8½	8½	East Africa . . .	Sir Edmund G. Loder, Bart.
18½	8½	5½	Do. . . .	J. Carr Saunders.
18½	7½	6	North End of Lake Rudolph	Julius Jeppe.
18½	6½	5½	East Africa . . .	Sir Robert Harvey, Bart.
18	8½	5½	Do. . . .	F. J. Jackson, C.B.
17½	8	7½	Uganda	Hon. Walter Rothschild.
17½	7½	5	East Africa . . .	H. C. V. Hunter.
17	8	7	Do. . . .	Sir Robert Harvey, Bart.
♀ 17	5½	4½	North End of Lake Rudolph	A. H. Neumann.
16½	7	5½	Do.	F. J. Jackson, C.B.
16½	7½	4½	East Africa . . .	Capt. R. A. J. Montgomerie, C.B., R.N.
16½	6½	5½	Coast Region between Lamu and River Juba	Sir John Kirk, K.C.B.
16½	5½	5	River Juba	Do.
15½	7½	5½	Coast Region between Lamu and River Juba	Hon. Walter Rothschild.
15½	8½	7	Do.	E. Gedge.
15½	7½	5½	East Africa . . .	F. H. Barber.
-14½	6½	6½	Coast Region between Lamu and River Juba	Mr. Justice Hopley.
-14½	5	9½	?	Berlin Museum.

Head of Bontebok.

BONTEBOK (*Damaliscus pygargus*).

Distinguished from the preceding species of the genus by the white blaze on the face, which is continuous from the horns to the nose. Height at shoulder about 40 inches. Weight about 200 lbs. Colour of fore part of back rufous fawn darkening into blackish on the rump, flanks, shoulders, front of limbs, and tail-tuft; rump, upper half of tail, under parts, and much of hinder surface of limbs white.

The curious pied marking of the bontebok, its snow-white face, belly, legs, and rump, and the glaze-like, purplish-lilac gloss of the upper part of the coat—which may be described as chestnut upon the neck and warm purplish-brown upon the body—are very remarkable. The horns very nearly resemble those of the blesbok in shape, but the colour is much darker. The blesbok and bontebok formerly gave great sport to the Boers and European hunters. Both of these blaze-faced antelopes run steadily up-wind, “carrying their broad white noses close to the ground like a pack of harriers in full cry.”

Distribution.—Cape Colony, south of the Vaal River; now nearly exterminated. Although formerly abounding in tens of thousands on the Karoos of Cape Colony and the plains of the Orange Free State, bontebok are now reduced to a single herd carefully preserved on some flats on the estate of Mr. Vander-Byl, near Swellendam, in the south of Cape Colony.

BONTEBOK (*Damaliscus pygargus*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
16 $\frac{3}{8}$	6 $\frac{3}{8}$	9 $\frac{1}{8}$	?	British Museum.
16 $\frac{1}{2}$	6 $\frac{5}{8}$	8 $\frac{3}{4}$	Bredasdorp . . .	A. C. Campbell.
¹ 15 $\frac{7}{8}$	6 $\frac{7}{8}$	8	Do.	F. C. Selous, British Museum
15 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Dr. W. P. Y. Bainbrigge.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	5	Do.	A. Ohlsson.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{3}{8}$	Do.	A. C. Humbert.
-15 $\frac{1}{2}$	6 $\frac{3}{8}$	9 $\frac{3}{8}$	Do.	Mr. Justice Hopley.
15 $\frac{3}{8}$	6 $\frac{1}{8}$	8 $\frac{1}{8}$	Cape Colony . . .	Sir Victor Brooke's Collection.
-15 $\frac{1}{16}$	6 $\frac{1}{8}$	7 $\frac{1}{4}$	Bredasdorp . . .	Dr. Percy Rendall.
15	6 $\frac{1}{4}$	8 $\frac{1}{2}$	Cape Colony . . .	F. C. Selous.
15	6 $\frac{3}{8}$	7 $\frac{3}{8}$	Do.	Capt. F. Cookson.
15	6 $\frac{1}{4}$	6 $\frac{3}{4}$	Bredasdorp . . .	W. S. Curtis.
-15	6 $\frac{1}{4}$	7 $\frac{3}{8}$	?	Julius Jeppe.
-15	...	...	?	C. T. Jones.
-14 $\frac{1}{2}$	...	...	Bredasdorp . . .	Cape Town Museum.
-14 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{3}{8}$	Do.	Julius Jeppe.
15	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Cape Colony . . .	F. C. Selous.
14 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{1}{4}$	Bredasdorp . . .	Hon. Walter Rothschild.
-♀ 14 $\frac{1}{2}$	5 $\frac{3}{8}$	7 $\frac{3}{8}$	Do.	Julius Jeppe.
14 $\frac{3}{8}$	5 $\frac{3}{8}$	7 $\frac{3}{8}$	Cape Colony . . .	F. C. Selous.
♀ 13 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{3}{8}$	Bredasdorp . . .	Julius Jeppe.
² ♀ 13 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	Do.	F. C. Selous, British Museum.

¹ Weight, 200 lbs.; height, 41 $\frac{1}{2}$ at shoulder.² Height at shoulder, 36 $\frac{1}{2}$.

BLESBOK (*Damaliscus albifrons*).

Nunni of the Bechuanas.

Closely allied to the last (of which it may be only a local race), but with less black on the body and limbs, the blaze divided by a white line between the eyes, and the rings on the horns yellowish.

Formerly to be numbered by hundreds of thousands, the beautiful blesbok has in the last twenty years grown very scarce indeed. It can now scarcely be reckoned as a South African beast of chase, being only met with in small numbers on a few Boer farms in the Transvaal and the Orange Free State. Yet, thirty or forty years ago, blesboks often literally darkened the face of the land with their innumerable legions. The north of the Cape Colony, Griqualand West, the Free State, and the plains of the Western and Southern Transvaal may be described as the true home of this charming antelope in the old days. In 1848 Gordon Cumming speaks of a sight he beheld in the blesbok country. "The plains," he says, "exhibited one purple mass of graceful blesboks, which extended without a break as far as my eyes could strain; the depth of their vast legions covered a breadth of about six hundred yards." What a contrast with the scarcity of the present day!

Distribution.—Northern plains of Cape Colony, Orange Free State, Transvaal, and Bechuanaland; now nearly exterminated.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18½	5½	12½	South Africa . . .	Sir Edmund G. Loder, Bart.
-18	6½	10½	Orange Free State . .	F. R. N. Findlay.
17½	6½	7	Transvaal . . .	Abe Bailey.
-17½	7	7½	Do. . . .	Dr. W. P. Y. Bainbrigge.
-16½	7	7½	Orange Free State . .	Count E. Hoyos.
-16½	6½	9½	Do. . . .	Julius Jeppe.
-9 16½	6½	8½	Do. . . .	Do.
-16½	...	...	?	O. R. Dunell.
16½	7	8	Orange Free State . .	Capt. H. D. Livingstone.
16½	6½	7½	?	Capt. G. F. Henry.
16½	6½	8½	South Africa . . .	Sir Edmund G. Loder, Bart.
16	6½	8½	?	Capt. Lord Douglas Compton.

BLESBOK (*Damaliscus albifrons*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner
-16	..	..	?	Cape Town Museum.
-15 $\frac{7}{8}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	?	Mr. Justice Hopley.
-15 $\frac{3}{4}$	...	...	?	C. T. Jones.
15 $\frac{8}{8}$	6 $\frac{3}{4}$	5 $\frac{1}{2}$	?	A. Beit.
15 $\frac{1}{2}$	6 $\frac{7}{8}$	8 $\frac{1}{4}$	?	Capt. F. H. Lehmann.
15 $\frac{1}{2}$	5 $\frac{1}{8}$	7 $\frac{1}{2}$	?	C. H. Akroyd.
15 $\frac{1}{4}$	6 $\frac{1}{2}$	¹ 10	Driefontein, O.F.S.	F. C. Selous, British Museum.
15 $\frac{1}{4}$	6 $\frac{1}{8}$	5 $\frac{3}{4}$	South Africa . . .	Hon. Walter Rothschild.
15 $\frac{1}{4}$	6 $\frac{1}{8}$	6 $\frac{1}{2}$	Zululand . . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
15 $\frac{1}{8}$	6 $\frac{1}{2}$	7 $\frac{3}{4}$	South Africa . . .	Hon. Walter Rothschild.
-15	6 $\frac{1}{4}$	8 $\frac{1}{2}$	?	Julius Jeppe.
♀ 15	5 $\frac{1}{2}$	...	Orange Free State . .	Capt. H. D. Livingstone.
14 $\frac{1}{4}$	6 $\frac{1}{8}$	8 $\frac{3}{4}$	Cape Colony . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
-14 $\frac{1}{8}$	5 $\frac{1}{8}$	7	Transvaal . . .	F. Vaughan Kirby.
14	6 $\frac{3}{8}$	7 $\frac{1}{2}$	Do. . . .	Sir Victor Brooke's Collection.
14	6 $\frac{1}{2}$	7 $\frac{1}{2}$	Heidelberg . . .	R. H. Sawyer.
-14	8 $\frac{3}{4}$	6 $\frac{1}{4}$	Transvaal . . .	T. E. Buckley.
-14	6	7 $\frac{1}{2}$	?	A. Ohlsson.
-14	7 $\frac{3}{4}$	12 $\frac{1}{8}$	?	Mr. Justice Hopley.
14	4 $\frac{7}{8}$	6 $\frac{1}{2}$	?	Dr. W. P. V. Bainbrigge.
13 $\frac{1}{2}$	5	5 $\frac{3}{4}$	?	F. C. Selous.
12 $\frac{3}{4}$	4 $\frac{5}{8}$	7 $\frac{1}{2}$	Driefontein, O.F.S.	F. C. Selous, British Museum.

¹ Weight, 180 lbs. Height at shoulder, 39 $\frac{1}{2}$ inches.

Head of Sassaby. From a specimen shot in Mashonaland by F. C. Selous.

SASSABY or BASTARD HARTEBEEST (*Damaliscus lunatus*).

<i>Incolomo</i> of the Matabele.	<i>Luchu</i> of the Masaras.
<i>Ingalowana</i> of the Basutos.	<i>M'tengo</i> in the Chilala and Chibisa countries.
<i>Inkweko</i> of the Masubias.	<i>Mzanci</i> of the Swazis.
<i>Inyundo</i> of the Makalakas.	<i>Mzanzi</i> of all Zulu tribes
<i>Kaboli</i> in the Barotse country and Lake Ngami country.	<i>Unchuru</i> of the Makubas.

Horns starting obliquely outwards, with a single upward and backward lunate curve. Height at shoulder nearly 4 feet. General colour dark chestnut rufous, with the face, shoulders, hips, upper portions of limbs, and tail-tuft black, and the region of the groin and margin of the ears white.

The sassaby has the reputation—in the opinion of all hunters who have tested its speed—of being the fleetest and most enduring animal in South Africa. Were it not that this handsome antelope, in common with its near relative the Cape hartebeest, happens to be lacking in presence of mind, it would very seldom fall to the sportsman's rifle. The sassaby is not difficult to circumvent. A troop can be often

turned from its course, or brought to a halt, by firing a bullet or two over the heads of the fleeing animals. Or if the leader of the troop can be wounded and turned out, the rest of the herd become confused and now and again offer easy shots. Like the Cape hartebeest the sassaby has extremely drooping quarters. The skin of one of these antelopes, freshly killed, is very beautiful, the wonderful smoothness and the brilliant purplish bloom of the coat being specially noticeable.

Distribution.—South-East Africa, from north of the Orange River to the Zambesi, and westward to Lake Ngami, and northwards to British Central Africa (see below).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15½	7½	15½	Mashonaland . . .	Sir John Willoughby, Bart.
15½	7½	11¾	?	Sir Edmund G. Loder, Bart.
15½	8½	12½	Daka, S. of Victoria Falls	F. C. Selous.
15½	8	12½	S.E. Africa . . .	The late Sir Andrew Smith, British Museum.
-15½	7½	12¾	Do.	Julius Jeppe.
15½	7½	12	Do.	Sir Victor Brooke's Collection.
15	8½	11½	Do.	G. Richards.
15	7	11	Do.	A. Moseley.
14½	8	10	Lebombo Mountains .	F. Vaughan Kirby.
14½	7½	11½	Pungwe	J. W. Allen.
14½	7½	12	North of Delagoa Bay .	A. Cameron.
-14½	8	15½	Matabeleland . . .	J. Brander Dunbar.
-14½	8	15	S.E. Africa . . .	James J. Harrison.
14½	7½	11	Mashonaland . . .	F. C. Selous, British Museum.
14½	7½	11½	Do.	Do.
14½	7	10	Pungwe	Capt. G. F. Henry.
14½	7	10	Matabeleland . . .	Rev. Dr. R. J. Nevin.
-♀ 14½	6	9	Do.	Dr. W. P. Y. Bainbrigge.
14½	7½	13	Do.	W. Van Ness.
¹ 14½	7½	12½	Bangweolo Flats, British Central Africa	F. Smitheman.
-14½	8½	11	Pungwe	Count E. Hoyos.

¹ The locality noted is of great interest, as indicating the existence of this species north of the Zambesi.

SASSABY or BASTARD HARTEBEEST (*Damaliscus lunatus*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
14½	7½	10½	Mashonaland . . .	Hon. Walter Rothschild.
-14½	7½	13	S.E. Africa . . .	Dr. W. P. Y. Bainbrigge.
14½	8	14	Matabeleland . . .	Hon. R. A. Ward.
-14½	...	...	Do.	C. T. Jones.
14½	6½	9½	Pungwe	C. M. Swire.
14	7½	10	Do.	Marquis of Hamilton.
-14	6½	12½	Do.	A. Beit.
-14	8	12½	Do.	T. E. Buckley.
14	7½	10½	Do.	Hon. T. Thynne.
14	7	11½	Do.	R. K. Micklethwait.
♀ 13½	6½	11½	Mashonaland . . .	F. C. Selous, British Museum.
♀ 13½	6½	12½	Do.	H. and C. Beddington.
♀ 13½	...	...	Lebombo Mts. . . .	F. Vaughan Kirby.
♀ 13½	...	11½	Mabonga River . . .	H. M. Barber.
♀ 13	6	13½	Matabeleland . . .	Lord Brackley.



Horns of Brindled Gnu. From Julius Jeppe's specimen.

BRINDLED GNU (*Connochaetes taurinus*).

Ee-vumba of the Makalakas.

Inkongone of the Swazis and Zulus.

Ikokoni of the Basutos.

Minyumbwe of the Batongas.

Inkone-kone of the Amandebele.

Numbo of the Masubias.

Unzozo of the Makubas.

From their near relatives the hartebeests the gnus, or wildebeests, are distinguishable at a glance by their grotesque shape and smooth horns, as they also are by their habits. The short, broad, and massive head has a blunt and bristly muzzle, and tufts of coarse hair on the forehead and chin; the chin-tuft also extending on to the throat. The horns, which are placed on the crown of the head, are approximated at their bases, especially in old bulls, and are nearly smooth, more or less flattened at the bases, but almost cylindrical at the tips; the curvature being at first outwards, or outwards and downwards, and then bending upwards at the tips. An abundant mane of stiff, upright hair clothes the back of the neck; and the tail is covered with longer and softer hairs, reaching considerably below the hocks. It is from the equine form of the tail that these animals were long popularly known by the name of "horned horse." The hoofs are characterised by their narrow form.

The blue wildebeest, as this species is called at the Cape, is a large animal, standing about 4 feet 3 inches at the shoulder. Its most characteristic features are the outward direction of the horns, which are but little expanded at the base, and not unlike those of a buffalo, the uniformly black tail, and the absence of long hair on the lower part of the chest and belly. The general colour varies from grizzled roan to blackish slaty brown, with more or less distinct vertical dark stripes on the sides of the neck and fore-quarters; these stripes being most conspicuous in the lighter-coloured specimens. Typically, the fringe of hair on the throat, like the mane and tuft on the forehead, is black.

Distribution.—Formerly ranging from the north of the Orange River for a long distance up East Africa, the brindled gnu is now practically

exterminated in the Orange Free State and the adjacent districts south of the Limpopo. It is, however, still to be met with in parts of Griqualand West and of the Kalahari, as well as in British Bechuana-land; while in Khama's country and Rhodesia, and thence north-

Head of Bull Nyasaland Gnu.

From Sir H. H. Johnston's *British Central Africa*, published by Messrs. Methuen.

wards through Central and East Africa, it is comparatively abundant, or, at all events, was so before the ravages of the rinderpest, and it also occurs in Mozambique. In spite of its clumsy and ungainly appearance, the brindled gnu is a rapid mover; and even when severely wounded will not unfrequently succeed in making good its escape from the mounted hunter.

It is generally distributed in South-East Central Africa, and north of the Zambesi is represented by the Nyasaland gnu (*C. taurinus johnstoni*), which Mr. F. Vaughan Kirby found also in the Mozambique province.

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
...	29	31	¹ 13½	15½	Sabi Flats	Dr. R. P. Mitchell.
-33½	28½	...	6½	24	Do.	B. Secretan.
32½	29	20	4	26½	P. E. Africa	F. Vaughan Kirby.
...	28½	21½	5½	17½	Matabeleland	G. H. M. Banks.
...	28½	20¾	5	16	Pungwe	C. C. Gouldsmith.
² 31½	28	...	8	18½	P. E. Africa	F. Vaughan Kirby.
31	...	23	¹ 11½	19½	S. E. Africa	The late J. A. Nicolls.
30½	...	...	...	...	Do.	F. C. Selous.
30½	...	...	...	17	Do.	F. H. Barber.
...	27½	23½	4¾	16¾	?	Julius Jeppe.
...	-27	21	4½	20½	?	Mr. Justice Hopley.
...	-26¾	29	5	16¾	?	Julius Jeppe.
...	26½	21½	4½	20½	Matabeleland	Major R. Hayes-Sadler.
...	26½	19½	4¾	17	Do.	F. G. Shaw.
...	-26½	31½	...	17	Delagoa Bay	H. T. and A. H. Glynn.
30½	26½	22	4½	20½	Beira	Rowland Ward.
...	-26	31	4¾	21	Lydenburg	F. H. Barber.
...	26	22½	6	18½	Mababe Plain	F. C. Selous.
...	26	21½	7	17½	Pungwe	Frank Harris.
...	25½	22	4½	17	S. Africa	G. Richards.
...	♀ 25	22½	4½	10	P. E. Africa	F. Vaughan Kirby.
29	25½	21	4½	18¾	Zululand	Lieut.-Col. Hon. W. Coke.
-28½	25	...	11	13	?	F. J. Newnham.
...	24¾	20¾	4¾	16¾	Pungwe	Capt. F. H. Lehmann.
...	-24½	31¾	¹ 14	16½	Sabi Flats	James J. Harrison.
...	24½	20½	5	17¾	Matabeleland	Rev. Dr. R. J. Nevin.

¹ Circumference.² Height at shoulder, 53½.

BRINDLED GNU (*Connochoestes taurinus*)—*continued*.

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality	Owner.
	24½	20	4	17½	Pungwe . .	P. B. Vander-Byl.
...	24½	21	4½	15½	Do. . .	Marquis of Hamilton.
28½	24½	22	5½	19½	S. Africa . .	Sir Edmund G. Loder, Bart.
..	24½	15½	4½	19½	Pungwe . .	Ford G. Barclay.

Head of Brindled Gnu.

	24½	20½	4½	17½	Barotseland	H. Timmins.
	23½	19½	4½	16½	Pungwe . .	H. R. Holden.
..	23½	20	5½	13½	S. Africa . .	C. D. Rudd.
	23½	19½	¹ 11½	17½	?	H. Atkinson.
.	23½	21½		18½	S. Africa . .	T. E. Buckley.
.	23½	24½	7	15½	Beira . .	A. M. Naylor.
	23½	20½	4½	16½	Mashonaland .	J. A. Jameson.

¹ Circumference.

BRINDLED GNU (*Connochæstes taurinus*)—continued.

Widest outside.	Widest inside.	Length on outside curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
...	23½	20½	¹ 12	14½	Botletli River .	H. A. Bryden.
...	-23	22¾	4½	17½	North of Great Namaqualand	Th. Rehbock.
...	-23	...	¹ 13½	14	?	A. Ohlsson.
...	-23	20	¹ 14½	16½	S. Africa . .	Dr. W. P. Y. Bainbrigge.
...	-22½	21½	6½	...	Pungwe . .	Count E. Hoyos.
...	20	18¾	4	13½	Benguela, Angola	G. W. Penrice.
...	...	21	...	...	Damaraland .	Cape Town Museum.
...	♀ 17½	18½	¹ 8	8	?	Dr. W. P. Y. Bainbrigge.
...	27	19½	4½	15½	Tushila Plains, B.C.A.	G. N. Barclay.
...	24½	19	4	16¾	B.C.A. . .	J. E. Gough.
...	22¾	18½	4½	15	Tushila Plains, B.C.A.	C. C. Bowering.
...	16½	12½	¹ 10	12	E.C.A. .	James J. Harrison.

¹ Circumference.

Head of White-Bearded Gnu.

WHITE-BEARDED GNU (*Connochestes taurinus albobatus*).Swahili name *Nyumbu*.

Apparently a local race of the brindled gnu, distinguished by its slightly paler coloration, and the yellowish white throat-fringe, a few whitish hairs being also mingled with the mane.

The widest part of the front of the horns is somewhat different from the corresponding portion of the typical variety, as will be seen by reference to the illustrations.

Distribution.—East Africa, Athi plains, Ukambani, north of Kilimanjaro.

Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality	Owner.
² 27½	22	6	15½	East Africa	Lord Delamere.
² 28	. .	. .	16	Do. . .	Sir John Willoughby, Bart.
² 27	20	¹ 12	17	Do.	R. P. Carroll.
26½	22½		18¾	Do.	H. C. V. Hunter.
25½	22½		16½	Do.	F. J. Jackson, C.B.
25	20½	¹ 12½	12½	Do. . .	Rowland Ward.
24	20½	.	15½	Do. .	Sir Robert Harvey, Bart.
23½	18½	4½	12	?	S. L. Hinde.

¹ Circumference² Outside.

WHITE-BEARDED GNU (*Connochoestes taurinus albojubatus*)—*continued*.

Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
² 24	17		15	East Africa . .	W. Astor Chanler.
22½	20	5½	16½	Athi Plains . .	E. Gedge.
21½	19½	5	13½	East Africa . .	Capt. R. A. J. Montgomerie, C.B., R.N.
21½	18½	4	17½	Athi Plains . .	Col. F. D. Lugard, C.B., D.S.O.
21½	21	5½	15½	East Africa . .	Capt. J. W. Pringle.
21½	21½	¹ 12½	17½	Do. . .	Lionel Decle, Paris Museum.
21½	19	4½	15	Do. . .	E. J. L. Berkeley.
22	19	4	15½	Do. . .	Henry Charrington.
♀ 19½	15	3	13½	Do. . .	Lord Delamere.
21½	19½	5½	12½	?	Hon. Walter Rothschild.
20½	16½	4	15½	East Africa . .	Do.

¹ Circumference.² Outside.

Skull and Horns of White-Bearded Gnu.

Horns of White-Tailed Gnu. From F. H. Barber's specimen.

WHITE-TAILED GNU (*Connochestes gnu*).

This southern species is the true gnu, being formerly known to the Hottentots by that name, while, by the colonists, it is termed the black wildebeest. Its inferior size (height at shoulder about 3 ft. 10 ins.), the downward curvature of the horns at starting and their great expansion at the base, the pure white tail, and the abundant fringe of long hair on the chest and fore part of the belly, serve at once to distinguish it from the brindled gnu. The general colour is uniform deep amber-brown, passing into black. Females are much smaller than males; and have the horns more slender and less expanded at the base.

Distribution.—The northern range of this species was approximately limited by the Vaal, or northern branch of the Orange River. Like most of the large animals of the Cape it is now rapidly approaching extermination, being apparently at present represented by herds of a few hundred head preserved by the Boers of the Orange Free State. On the plains of the latter country, as well as on the Karoos of Cape Colony, it was formerly found in vast herds, generally in company with quaggas. Fierce and treacherous in disposition, it was especially characterised by its habit of indulging in grotesque capers and frolics on the approach of strangers; a practice totally unknown to its cousin on the farther side of the Vaal River.

WHITE-TAILED GNU (*Connochaetes gnu*)—*continued*.

Head of White-Tailed Gnu.

Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality	Owner.
-30 $\frac{1}{2}$	¹ 22 $\frac{1}{2}$	14	Kalahari . . .	Dr. F. H. H. Guillemard.
30	10 $\frac{1}{2}$	17 $\frac{1}{2}$	?	Mr. Justice Hopley.
-28	...		Colesburg . . .	F. H. Barber. (See illustration.)
-27 $\frac{1}{2}$	7	11	Orange Free State .	Count E. Hoyos.
-27 $\frac{1}{2}$		.	Wynburg . . .	F. H. Barber. (See illustration.)
-27 $\frac{1}{2}$	.		Victoria W., Cape Colony	Cape Town Museum.
-27 $\frac{1}{2}$	8 $\frac{1}{2}$	13	?	Mr. Justice Hopley.
26 $\frac{1}{2}$	8	14 $\frac{1}{2}$	South Africa . . .	Sir Edmund G. Loder, Capt
-26 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	Orange Free State .	Julius Jeppe.
-26 $\frac{1}{2}$	¹ 20 $\frac{1}{2}$	12 $\frac{3}{4}$	Do. . . .	Dr W. P. Y. Bainbrigge.
-26	11 $\frac{3}{8}$	16 $\frac{1}{2}$	Do. . . .	The MacLaine of Lochbuie.
25	6 $\frac{3}{8}$	15 $\frac{1}{4}$	Do. . . .	A. Payne-Gallwey.
-24 $\frac{1}{2}$	8 $\frac{1}{2}$	8	Do. . . .	Julius Jeppe.

¹ Circumference.

WHITE-TAILED GNU (*Connochoestes gnu*)—*continued*.

Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
24½	6½	15½	Orange Free State .	Julius Jeppe.
24	8½	15	Do. . .	Hon. Walter Rothschild.
24	8½	13½	Do. . .	C. D. Rudd.
23	7½	17½	Do. . .	A. H. Neumann.
23	7½	15	Do. . .	Bloemfontein Museum.
22¾	7½	15	Do. . .	F. C. Selous.
22¾	8½	15½	Do. . .	F. C. Selous.
-22½	9½	11¾	Do. . .	Julius Jeppe.
-22⅞	8	14¾	Do. . .	Dr. Percy Rendall.
22	9	17⅞	Do. . .	Hon. Walter Rothschild.
-22	9	11¾	Do. . .	Julius Jeppe.
21¾	10⅞	18⅞	Do. . .	British Museum.
-21½	¹ 20	12½	Do. . .	A. Ohlsson.
21	10	18½	Do. . .	Dublin Museum.
20	5½	11¾	Do. . .	Julius Jeppe.
♀ 19¾	¹ 13½	10¾	Do. . .	Dr. W. P. Y. Bainbrigge.
♀ 16	4¾	11½	Do. . .	Bloemfontein Museum.
-♀ 15½	5	14¾	Do. . .	Julius Jeppe.
♀ 14	5	11	Do. . .	Rowland Ward.

¹ Circumference.



Horns of Common Duiker. From a specimen shot by F. C. Selous.

COMMON DUIKER (*Oephalophus grimmi*).

Puti of the Bechuanas.

Impungi of the Swazis and Zulus.

Impunzi of the Matabele.

Imputi of the Basutos.

Gwapi of the Chinyanjas.

The common duiker, or "diver," is the southern representative of an extensive group of small or medium-sized antelopes, mostly confined to Africa, but also containing one genus and species from India. In all of these the muzzle is naked; face-glands of a more or less elongated form are present, as are false hoofs; the tail is of medium length, the knees have no tufts of long hair, and the females are provided with four teats. The horns, which are short and straight, are generally present in both sexes, but are smoother and more slender in the does than in the bucks; and the upper molar teeth have low crowns, with square grinding surfaces. The African duikers have a single pair of horns, generally present in both sexes, and more or less hidden by a tuft of long hairs growing from the crown of the head; and the face-glands are arranged to form a bare line of pores on each side of the muzzle. The present species—the true duikerbok—is the largest member of a group of three duikers, characterised by the horns (usually absent in the females) inclining upwards at a sharp angle above the plane of the profile of the nose. Other features of the sub-group are the long and pointed ears, the general yellowish or grayish colour, devoid of dark markings, save for a brown nose-spot. Although essentially a southern form, the common duiker, which measures about 23 inches at the shoulder, ranges on the west coast as far north as Angola, and on the eastern side of the continent to British East Africa and Somaliland. Weight about 25 lbs. Throughout its habitat the timid duiker is to be met with wherever sufficient covert exists; and its furtive, squatting, dodging habits are most aptly indicated by

its name. Met with either singly or in pairs, it is never found far away from covert, strictly avoiding both open plains and steep, rocky mountains. Absence of water is, however, no bar to its existence, as it thrives in the heart of the Kalahari. It is occasionally hunted with foxhounds; its flesh is but moderately good.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-6	2 $\frac{5}{8}$	3 $\frac{1}{2}$	S. Africa . . .	James J. Harrison.
-5 $\frac{5}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	Do. . . .	Julius Jeppe.
-5 $\frac{1}{2}$	2 $\frac{5}{8}$	2 $\frac{7}{8}$	Selinya, Khama's country	F. C. Selous.
5 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	Cape Colony . .	Mr. Justice Hopley.
-5 $\frac{1}{2}$	...	...	S. Africa . . .	Lionel Phillips.
-9 5 $\frac{1}{2}$	1 $\frac{1}{2}$	3	Do. . . .	Dr. W. P. Y. Bainbrigge.
5 $\frac{1}{4}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$	Zululand . . .	Capt. L. O. Williams.
-5 $\frac{1}{4}$	...	...	?	O. R. Dunell.
-5 $\frac{1}{4}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$	?	Julius Jeppe.
-5 $\frac{1}{4}$	2 $\frac{5}{8}$	2	Inyamonga, P.E. Africa	F. Vaughan Kirby.
-5 $\frac{5}{8}$	2 $\frac{5}{8}$	1 $\frac{7}{8}$	Bredasdorp, C. Colony	Mr. Justice Hopley.
5 $\frac{5}{8}$	2	2 $\frac{3}{8}$	Transvaal . . .	H. T. and A. H. Glynn.
5	2 $\frac{1}{4}$	2 $\frac{1}{4}$	S. Africa . . .	G. Richards.
5	2 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . . .	F. C. Selous.
-5	2 $\frac{1}{2}$	$\frac{3}{4}$	Transvaal . . .	F. Vaughan Kirby.
-5	...	...	Natal	T. E. Buckley.
5	2 $\frac{1}{2}$	3 $\frac{1}{4}$	Northern Rhodesia .	F. Smitheman.
4 $\frac{1}{2}$	...	2 $\frac{7}{8}$	Algoa Bay . . .	F. C. Selous, British Museum.
4 $\frac{1}{2}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	South Africa . .	G. H. M. Banks.
4 $\frac{1}{2}$	2 $\frac{5}{8}$	2 $\frac{1}{2}$	Do. . . .	R. A. Cooper.
-4 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	Mashonaland . .	A. Ohlsson.
4 $\frac{1}{2}$	2	2 $\frac{3}{4}$	South Africa . .	Dr. W. P. Y. Bainbrigge.
-4 $\frac{1}{2}$	...	...	?	Cape Town Museum.
-4 $\frac{1}{2}$	...	...	?	C. T. Jones.
4 $\frac{5}{8}$	2	1 $\frac{5}{8}$	Matabeleland . .	Lord Brackley.
4 $\frac{5}{8}$	2 $\frac{5}{8}$	2 $\frac{1}{4}$	Chanda	C. C. Bowring.

COMMON DUIKER (*Cephalophus grimmi*)—*continued*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{3}{8}$	2	2 $\frac{3}{8}$	Zululand . . .	A. Cameron.
4 $\frac{1}{4}$	1 $\frac{7}{8}$	2 $\frac{3}{4}$	E. Africa . . .	Sir Robert Harvey, Bart.
4 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	Barberton . . .	Dr. Percy Rendall.
4 $\frac{1}{8}$	2	1 $\frac{1}{2}$	Benguela, Angola . .	G. W. Penrice.
4 $\frac{1}{8}$	1 $\frac{7}{8}$	2 $\frac{3}{8}$	Natal . . .	J. Wahlberg, British Museum.
4 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$	Near Borgu, West Africa	Capt. N. C. Welch.
4	2	2 $\frac{3}{4}$	Barotseland . . .	R. T. Coryndon.
4	2	1 $\frac{7}{8}$	East Africa . . .	F. J. Jackson, C.B.
♀ 4	1 $\frac{3}{8}$	1 $\frac{1}{4}$	North of Great Namaqualand	Th. Rehbock.
4	1 $\frac{7}{8}$	1 $\frac{1}{2}$	South Africa . . .	H. and C. Beddington.
4	2	1 $\frac{3}{4}$	Matabeleland . . .	W. W. Ashley.
♀ 3 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	Transvaal . . .	Julius Jeppe.

ABYSSINIAN DUIKER (*Cephalophus abyssinicus*).

Abyssinian name *Midaku*.

Belonging to the same sub-group as the common duiker, and agreeing with the crowned duiker (*C. coronatus*) in size, this species differs from the latter by the general colour of the fur being grayish brown, instead of bright yellow. It was discovered by the traveller Rüppell, and its habits have been well described by Mr. W. T. Blandford in his *Geology and Zoology of Abyssinia*.

Distribution.—The highlands of Abyssinia.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3 $\frac{3}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{8}$	Abyssinia . . .	Prince A. de Lucinge.
3 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	Do. . .	Sir Victor Brooke's Collection.
3 $\frac{3}{8}$	2	1 $\frac{1}{2}$	Galla country . . .	Viscount Edmond de Poncins.
2 $\frac{3}{4}$	1 $\frac{7}{8}$	1 $\frac{1}{4}$	Abyssinia . . .	British Museum.

Head of Blue Duiker

BLUE DUIKER (*Cephalophus monticola*).*Ipiti* of all the Zulu tribes.

In the great majority of the duikers, that is to say all except the three included in the group mentioned above, the horns, which are generally present in both sexes, slope backwards either in or just below the line of the profile of the nose. The present species is included in a sub-group characterised by the smoky-brown or blackish coloration; and is especially distinguished by the rufous legs and uniformly coloured rump, the height at the shoulder being 13 inches. Weight about 26 lbs.

Distribution.—Southern Africa, from the wooded districts of Cape Colony northwards to Benguela on the west, and Nyasaland on the east.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-2½	..	1½	Cape Colony . . .	F. Vaughan Kirby.
2½	1½	1½	Tushila Plain, B.C.A.	Hon. Walter Rothschild.
-2½		...	Knysna, Cape Colony	Cape Town Museum.
-2½	1½	1½	Do. . . .	Mr. Justice Hopley.
-2½	1½	½	Natal	Dr. Percy Rendall.
2		1½	Do. . . .	F. C. Selous.
2	1½	1½	Benguela	G. W. Penrice.
-2	..	...	?	O. R. Dunell.
1½	1½	1½	Benguela	Hon. Walter Rothschild.
-1½	1½	1½	?	A. Ohlsson.
-1½	..	..	?	C. T. Jones.
♀ 1½	1½	1½	Natal	Dr. Percy Rendall.
-1½	1½	1½	?	Julius Jeppe.
1½	1½	1½	?	Major H. J. Goold-Adams, C.B., C.M.G.
-1½	1½	1½	?	Julius Jeppe.

MAXWELL'S DUIKER (*Oephalophus maxwelli*).

This species belongs to the sub-group characterised by the smoky-brown or blackish colour. In size it is small (height at shoulder about 14 inches). The face is coloured like the back; the limbs, like the body, are grayish brown; and the rump is not parti-coloured. It was first brought to England by Col. C. Maxwell, and described by Major Hamilton Smith in 1827.

Distribution.—West Africa, from Gambia to the Gold Coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
1 $\frac{3}{8}$	2 $\frac{1}{8}$	2	Fanti	Hon. Walter Rothschild.

RED or NATAL DUIKER (*Oephalophus natalensis*).

Rooi-Bosch-bokje of the Boers. *Msumbi* of the Swazis and Malonga.

Mkumbi of the Zulus. *Izikupu* of the Basutos.

Chisimbi of the Lower Zambesi natives.

This duiker is classed in another sub-group of small or medium-sized species characterised by the fulvous, rufous, or chestnut ground-colour; and is specially distinguished by its small size (height at shoulder, 17 inches) and completely uniform coloration, having no dark markings on either the face or body.

Distribution.—Natal, Transvaal, and Mashonaland (including all the forest and bush country of the East Coast), also seen by F. Vaughan Kirby and James J. Harrison near the Lualwa River, Mozambique Province.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-3 $\frac{7}{8}$	2 $\frac{3}{4}$	2	?	Julius Jeppe.
-3 $\frac{3}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{4}$	Shupanga Forest	F. Vaughan Kirby.
3 $\frac{3}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{8}$	Sabi Flats	James J. Harrison.
-3 $\frac{3}{8}$	2 $\frac{3}{8}$	2	Makongwa Mountains, Barberton (about 6000 ft.)	Dr. Percy Rendall.
-3 $\frac{1}{4}$	3	2	Foothills of Kahlamba . .	F. Vaughan Kirby.
-3 $\frac{1}{4}$	2 $\frac{1}{8}$	2 $\frac{3}{8}$	?	Julius Jeppe.
-3 $\frac{1}{2}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	Spitzkop	H. T. and A. H. Glynn.

RED or NATAL DUIKER (*Cephalophus natalensis*)—*continued*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3 $\frac{1}{8}$	...	2 $\frac{1}{8}$	Natal	Dr. A. Kraus, British Museum.
-3 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{7}{8}$	Do.	Mr. Justice Hopley.
-3	...	...	?	C. T. Jones.
-3	...	2	?	F. J. Newnham.
3	2 $\frac{3}{8}$	1 $\frac{3}{8}$	Natal	Major H. J. Goold-Adams, C.B., C.M.G.
-♀ 2 $\frac{3}{4}$	1 $\frac{7}{8}$	1	Foothills of Kahlamba .	F. Vaughan Kirby.
2 $\frac{3}{4}$	2	...	?	Sir Edmund G. Loder, Bart.
2 $\frac{3}{4}$	2 $\frac{5}{8}$	2 $\frac{1}{4}$	South Africa	Dr. Oakshott.
-2 $\frac{3}{4}$	...	...	Lydenburg	Cape Town Museum.
2 $\frac{5}{8}$	2 $\frac{1}{2}$	1 $\frac{7}{8}$	?	F. E. Potter.
-2 $\frac{5}{8}$	...	...	?	O. R. Dunell.
-2 $\frac{1}{2}$	2 $\frac{3}{4}$	2	Natal	Dr. W. P. Y. Bainbrigge.
2 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$	S.E. Africa	G. Richards.
-2 $\frac{1}{2}$	1 $\frac{3}{4}$	...	?	A. Ohlsson.
2 $\frac{5}{8}$	...	2 $\frac{1}{4}$	Near Durban	F. C. Selous.
-♀ 1 $\frac{7}{8}$	1 $\frac{3}{4}$	1	Barberton	Dr. Percy Rendall.
♀ 1 $\frac{5}{8}$	...	1	Near Durban	F. C. Selous.
♀ 1 $\frac{5}{8}$	1 $\frac{7}{8}$	2	?	Hon. Walter Rothschild.

BAY DUIKER (*Cephalophus dorsalis*).

From the last species the bay duiker, together with some allied West African forms, differs by the presence of a black stripe running along the back and continued to the tail. As a species, its special characters are the dark colour of the hams, and the evenly haired tail, which shows no sign of a tuft, and is parti-coloured.

Distribution.—West Africa, from Sierra Leone to the Cameroons; there being a northern and a southern race.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
3 $\frac{1}{4}$	2 $\frac{1}{8}$	2	West Africa	Hon. Walter Rothschild.

BANDED DUIKER (*Cephalophus doris*).

The tiger-like transverse black bands on the orange ground of the back suffice to distinguish at a glance this pretty little duiker from all its kindred.

Distribution.—The interior of the West Coast of Africa from Liberia to Sierra Leone, where it is commonly known as the mountain deer.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
—1 $\frac{7}{8}$	...	1	Liberia . . .	Dr. J. Büttikofer, British Museum.
1 $\frac{5}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.

YELLOW-BACKED DUIKER (*Cephalophus sylvicultor*).

This species is distinguished from all the other members of the genus by its large size, coupled with its blackish coloration, and the presence of a yellowish crest and similarly coloured longitudinal patch on the rump. Height at shoulder, 34 inches.

Distribution.—The West Coast of Africa from Liberia to Angola.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
6 $\frac{3}{4}$	...	4 $\frac{1}{2}$	Fanti . . .	British Museum.
6 $\frac{5}{8}$	3 $\frac{5}{8}$	4 $\frac{3}{8}$	Do. . . .	Do.
6 $\frac{1}{2}$	4	3 $\frac{1}{2}$	Liberia . . .	Dr. J. Büttikofer, British Museum.
5 $\frac{1}{2}$	3 $\frac{3}{8}$	4 $\frac{1}{8}$	Gaboon . . .	Sir Edmund G. Loder, Bart.
4 $\frac{5}{8}$	...	2 $\frac{1}{2}$	Fanti . . .	British Museum.

Head of Male Four-horned Antelope.

FOUR-HORNED ANTELOPE or CHOUSINGHA (*Tetraceros quadricornis*).

This antelope is the Oriental representative of the African duikers, from which it is distinguished by the following features. Typically there are two pairs of horns, and the face-glands form deep slits on the sides of the muzzle instead of a long naked line; the females being hornless. Height at shoulder about 25 inches, and weight about 40 lbs. General colour dull rufous brown, becoming whitish beneath, with the muzzle, the outer surface of the ears, and a line down the front of each leg blackish brown, and some white on the outer side of the pasterns. The front horns are not unfrequently mere knobs, and may even be wanting, as in most of the Kathiawar specimens.

Distribution.—Peninsular India south of the Himalayas.

Length of horns on front.		Circumference.		Tip to Tip.		Locality.	Owner.
Rear	Fore.	Rear.	Fore.	Rear.	Fore.		
-5	..		.	..		Jhalawar . .	H.H. Maharaja Rana Bahadur of Jhalawar.
-4½	2½	2¼	1¾	2½	1	Lulitpur . .	Surg.-Gen. Walker.
-4½	2½	...	.			Gurhwal . .	Capt. Ging.
4½	2½	2¼	2¾	1¾	2½	India . .	Sir Edmund G. Loder, Bart.
-4½	1½					Do. . .	J. D. Inverarity.

FOUR-HORNED ANTELOPE or CHOUSINGHA (*Tetraceros quadricornis*)—
continued.

Length of horns on front.		Circumference.		Tip to Tip.		Locality.	Owner.
Rear.	Fore.	Rear.	Fore.	Rear.	Fore.		
4	2½	1½	1½	3	1½	Indore . . .	Col. J. Evans, British Museum.
4	2	3	1½	1½	2½	Karkote Jungle, near Mhow	Lieut.-Col. G. D. F. Sullivan.
-3½	...	...	...	...	...	India . . .	Indian Museum.
3½	1½	1½	2	1½	2½	Do. . . .	Sir Robert Harvey, Bart.
-3½	1½	...	...	...	...	Do. . . .	J. D. Inverarity.
3½	2	3½	1½	1½	1½	Central Provinces .	C. F. Egerton.
3½	2	1½	1½	1½	2½	India . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
-3½	2½	...	...	...	...	Do. . . .	Indian Museum.
-3½	3½	...	...	...	...	Mandla, C.P. . . .	Capt. B. H. Boucher.
3½	1½	2	1½	...	...	Central Provinces .	Hon. Walter Rothschild.
3½	1½	2	1½	...	...	Jhalawar . . .	Mr. Justice Hopley.
3½	2½	2½	1½	2	½	Central Provinces .	C. D. Twopeny.
-3½	...	...	...	...	...	Kathiawar . . .	Lieut.-Col. L. L. Fenton.
-3½	2	2½	2½	2½	1½	Central Provinces .	Bombay Natural History Society's Museum.
3½	1½	1½	1½	2½	1½	N.W. Provinces .	Capt. R. B. Fell.
3½	1½	2	...	2½	1½	India . . .	A. M. Caccia.

Head of Salt's Dik-dik.

SALT'S DIK-DIK (*Madoqua saltiana*).

This species, the Beni Israel of the Arabs, is the typical representative of a group of tiny, slenderly-built antelopes characterised by the elongated, trunk-like nose, of which the tip is almost entirely hairy, the tuft of hair on the crown of the head, the short and almost rudimentary tail, and the minute size of the lateral hoofs. In the present species the last tooth in the lower jaw lacks the third lobe found in almost all ruminants, the trunk is but moderately developed, and the general colour fulvous or rufous fawn, scarcely more rufous on the sides than on the back. Height at the shoulder, 14 or 15 inches.

Distribution.—The Coast Range of Eastern Abyssinia, and adjacent districts of Somaliland.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
3	1	1	Abyssinia . . .	Sir Edmund G. Loder, Bart.
2 $\frac{3}{4}$	1	1	Do. . . .	Rowland Ward.
2 $\frac{5}{8}$		1 $\frac{1}{2}$	Do. . . .	Sir Victor Brooke's Collection.
2 $\frac{1}{2}$	1 $\frac{1}{2}$	.	North Kassala . .	Col. Ralph Vivian.
2 $\frac{3}{8}$	...	1 $\frac{5}{8}$	?	British Museum.

Skull of Phillips's Dik-dik.

Head of Swayne's Dik-dik.

SOMALI DIK-DIKS (*Madoqua swaynei*, *M. phillipsi*, and *M. guentheri*).General native name, *Sakáro*.

Different districts of Somaliland are inhabited by the three species of dik-diks above named. The first of these is allied to Salt's dik-dik, but is of smaller size; it inhabits the northern half of Somaliland. Phillips's dik-dik, which also occurs in Northern Somaliland, is intermediate in size between Salt's and Swayne's dik-dik, from both of which it is distinguished by having the back gray and the sides and shoulders rich rufous or cinnamon. On the other hand, Günther's dik-dik is widely different from both, being nearly allied to the under-mentioned Kirk's dik-dik, from which it is distinguished by the form of the nasal bones in the skull.

Height at shoulder about 14 inches. Weight, ♂ 6 lbs.;
♀ 5 lbs. (T. W. H. Clarke).

Sakáro Guyu (*Madoqua swaynei*). *Distribution*.—Berbera District.

Sakáro Gol-Ass (*Madoqua phillipsi*). „ Northern half of
Somaliland.

Sakáro Gussuli (*Madoqua guentheri*). „ Plateau of Central
Somaliland.

Length on front.	Girth.	Tip to Tip.	Locality	Owner.
3½	1½	1½	Somaliland	J. Kenneth Foster.
3½	..	...	Do.	Capt. F. A. Wilson.
3½	1½	1½	Do.	W. W. Ashley.
3½	1½	1½	Do.	Major C. F. Blane.

SOMALI DIK-DIKS (*Madoqua swaynei*, *M. phillipsi*, and *M. guentheri*)—
continued.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
$1-3\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Somaliland . .	A. E. Pease.
$-3\frac{1}{8}$	...	...	Do. . .	J. Brander Dunbar.
3	...	1	Do. . .	Sir Edmund G. Loder, Bart.
3	$1\frac{1}{2}$	...	Do. . .	Col. Arthur Paget.
-3	...	$1\frac{3}{4}$	Do. . .	Viscount Edmond de Poncins.
$-2\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{1}{8}$	Do. . .	Do.
$-2\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{1}{8}$	Do. . .	J. Johnston-Stewart.
$2\frac{7}{8}$	$1\frac{3}{8}$	$1\frac{5}{8}$	Do. . .	Lord Delamere.
$2\frac{3}{4}$	1	1	Do. . .	T. W. H. Clarke.
$2\frac{3}{4}$	$1\frac{1}{2}$	...	Do. . .	C. Liddell.
$-2\frac{5}{8}$	...	...	Do. . .	J. Brander Dunbar.
$1-2\frac{1}{2}$	1	...	Do. . .	C. V. A. Peel.
$2\frac{1}{2}$	...	...	Do. . .	Rowland Ward.
$2\frac{1}{2}$	1	$1\frac{3}{8}$	Do. . .	Major H. G. C. Swayne.
$2\frac{1}{2}$	...	$1\frac{3}{8}$	Do. . .	Sir Edmund G. Loder, Bart.
$2\frac{3}{8}$	$1\frac{1}{2}$	...	Do. . .	C. Liddell.
$-2\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{4}$	Do. . .	Dr. Percy Rendall.
$1-2\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{3}{4}$	Do. . .	Julius Jeppe.
$-1\frac{3}{4}$	$1\frac{1}{8}$	$1\frac{7}{8}$	Do. . .	Do.
$2-3\frac{1}{4}$	...	$1\frac{1}{4}$	Do. . .	C. V. A. Peel.
$2-2\frac{1}{2}$	...	...	Njemps . .	F. J. Jackson, C.B.

¹ *M. phillipsi*.² *M. guentheri*.

The following are the dimensions of a specimen of *M. guentheri*:—

Length, $23\frac{1}{4}$. Height, $15\frac{1}{4}$. Horns, $2\frac{1}{2}$. Weight, $8\frac{1}{4}$ lbs.

Shot at Njemps, 26:9:96, by F. J. Jackson, C.B.

Kirk's Dik-dik.

KIRK'S DIK-DIK (*Madoqua kirki*).

This dik-dik belongs to a small group of species differing from the one containing *M. saltiana* by the presence of three lobes to the last tooth of the lower jaw, and likewise by the more decidedly trunk-like character of the muzzle. Of the other members of the group, *M. damarensis* differs by its superior size, and *M. guentheri* by the still greater development of the trunk.

Distribution.—East Africa, from Southern Somaliland to Ugogo, most numerous on the coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3	...	1½	East Africa . . .	F. J. Jackson, C.B.
2½	..	1½	Do. . . .	British Museum.
2½	1½	1½	Do. . . .	Col. Trevor Ternan.
2½	.	1½	Do. . . .	Sir Robert Harvey, Bart.
2½	1½	1½	Kilimanjaro . . .	H. C. V. Hunter, British Museum.
2½	...	1½	East Africa . . .	Sir Robert Harvey, Bart.
2½	1½	1½	East African Coast .	Col. Trevor Ternan.
2½	...	1½	East Africa . . .	Hon. Walter Rothschild.
2½	..	1½	Do. . . .	Rowland Ward.
2½	...	1½	Manda Island . . .	Sir John Kirk, K.C.B.

DAMARALAND DUIKER (*Madoqua damarensis*).

Character mentioned under heading of the preceding species.

Distribution.—Damaraland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-2½	...	...	Damaraland . . .	Cape Town Museum (type specimen).
-2½	1½	1½	Do. . . .	A. Ohlsson.

HEMPRICH'S DIK-DIK (*Madoqua hemprichiana*).

Further information is desirable as to the right of this form to specific distinction.

Length on front.	Circumference.	Tip to Tip	Locality.	Owner.
2⅞	1⅞	1⅞	Abyssinia . . .	Hon. Walter Rothschild.

Head of Male Oribi from Pungwe, South-East Africa.

CAPE ORIBI (*Oribia scoparia*).

Inla of the Swazis and Zulus. *Pulukudukamani* of the Basutos.

The oribis, grysbuck, klipspringer, and their allies constitute a group of comparatively small African antelopes presenting the following characters in common. The muzzle has a naked tip, the head is devoid of a tuft of hair, large face-glands open beneath the eyes by a small aperture on each side, the tail is short or moderate, and false hoofs may or may not be retained. Horns are present only in the bucks, and are short, almost, or quite, straight, with smoothed tips and ridged bases. The upper molar teeth have tall and narrow crowns. The dik-diks are nearly allied, but differ by their tufted heads, and elongated hairy muzzles. The oribis, which are the largest members of the group, have normal hoofs and hair, and are specially distinguished by the presence of a bare glandular spot beneath each ear, and of a large opening in the skull beneath each eye-socket. In the Cape species the horns of the bucks are comparatively smooth and slender, with only their basal two inches slightly ridged; the tail being tufted and moderately bushy, with its terminal two-thirds black. Height at shoulders, 24 inches.

Distribution.—Typically, Africa south of the Zambesi. On grassy plains this graceful little antelope is still plentiful in many districts; and the gunner in search of bustard or francolin will often see one of them start up from its form before his pointer, to scud away at a great rate, occasionally making springs from side to side. At close quarters

a charge of shot will suffice to bowl over this diminutive little buck, and thus add some capital venison to the larder. Formerly oribi afforded excellent sport with greyhounds in the eastern districts of Cape Colony.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-7½	2½	2½	Zomba, B.C.A.	D. MacAlpine.
6½	2½	...	E. Griqualand	Jff. Darling, British Museum.
6	2½	2½	Spitzkop	H. T. and A. H. Glynn.
-6	...	...	Natal	Cape Town Museum.
-5½	2	2½	?	Mr. Justice Hopley.
-5½	2	3½	?	Do.
5½	2	3½	Barotseland	H. Timmins.
5½	2	2½	Bangueolo	F. Smitheman.
5½	2½	1½	Transvaal	F. R. N. Findlay.
5½	1½	3	Pungwe	G. L. Bonham.
-5½	1½	3½	?	Julius Jeppe.
-5½	2	2½	Gorongoza, P. E. Africa	F. Vaughan Kirby.
-5½	1½	3½	?	A. Ohlsson.
5½	2	2½	M'peta Island, Upper Zam- besi	R. T. Coryndon.
-5½	2	2½	Do.	Do.
-5½	...	...	?	O. R. Dunell.
5½	1	2½	S.E. of Lake Bangueolo	Poulett-Weatherley.
5	2	1½	Pungwe	Col. G. A. Percy.
5	1½	1½	?	F. Vaughan Kirby.
-5	1½	2½	M'peta Island	F. Aitkens.
-5	2	2½	Barberton	Dr. Percy Rendall.
-4½	...	...	Transvaal	C. T. Jones.
-4½	2½	2½	M'peta Island	F. V. Worthington.
4½	1½	1½	Pungwe	A. C. Humbert.
4½	2	2½	Cape Colony	British Museum.
4½	2½	2½	British Central Africa	J. E. Gough.
4½	1½	2	Manica Plateau	F. C. Selous.

CAPE ORIBI (*Oribia scoparia*)—continued.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{3}{4}$	1 $\frac{5}{8}$	1 $\frac{7}{8}$	?	Julius Jeppe.
4 $\frac{1}{2}$	1 $\frac{5}{8}$	1 $\frac{7}{8}$	Pungwe	R. K. Micklethwait.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	?	G. Richards.
-4 $\frac{1}{2}$	1 $\frac{5}{8}$	2 $\frac{1}{2}$	?	Count E. Hoyos.
-4 $\frac{3}{8}$	2 $\frac{7}{8}$	2 $\frac{5}{8}$	Upper Shiré Valley . .	Dr. Percy Rendall.
-4 $\frac{3}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	?	Dr. W. P. Y. Bainbrige.
4 $\frac{1}{2}$	1 $\frac{5}{8}$	2 $\frac{1}{2}$	Pungwe	A. Cameron.
4 $\frac{5}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	Tuchila Plain, B.C.A. .	Hon. Walter Rothschild.
4	1 $\frac{3}{4}$	2 $\frac{1}{8}$	Pungwe	G. Micklethwait.

ABYSSINIAN ORIBI (*Oribia montana*).*Miwaka* of the Abyssinians.

Very similar in most characters to the Cape species, but with a shorter and less bushy tail, the tip of which has only a few sparse black hairs. Height at shoulder, 22 $\frac{1}{2}$ inches. These antelopes are shy and rarely seen in the open, preferring the thick bush and long grass. If disturbed they go at a great pace with their heads quite close to the ground. Their flesh is very good.

Viscount Edmond de Poncins states that a fine male weighed 30 lbs. 13 oz., and stood 19 $\frac{1}{2}$ inches at the shoulder.

Distribution.—Abyssinia and Bongoland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5	...	2 $\frac{1}{2}$	Abyssinia	Sir Edmund G. Loder, Bart.
-4 $\frac{7}{8}$	2 $\frac{3}{8}$	2	Hawash, Abyssinia .	Prince A. de Lucinge.
-4 $\frac{1}{2}$	2	2	Do.	Viscount Edmond de Poncins.
4 $\frac{3}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{2}$	Dombelas, Abyssinia .	British Museum.
4.12	2.2	2.3	Sudan	Prince Henry of Liechtenstein.
4	2	2.6	Do.	Do.
3 $\frac{1}{2}$	2	2 $\frac{1}{4}$	Do.	Lieut.-Col. Hon. W. Coke.

WEST AFRICAN ORIBI (*Oribia nigricaudata*).

The present species is very close to the Abyssinian oribi, but of smaller size, grayer, and with a distinct black tip to the tail, as in the Cape species. Height at shoulder, 20 inches.

Distribution.—The open country of Senegal and Gambia.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{1}{8}$	$1\frac{7}{8}$	$1\frac{3}{4}$	Nigeria . . .	Capt. A. H. Festing.
$3\frac{3}{4}$	$1\frac{1}{2}$	...	Kiama . . .	A. W. M. Brodie.
3	$1\frac{5}{8}$	$2\frac{3}{4}$	Gambia . . .	Charles B. Mosse, British Museum.

HAGGARD'S ORIBI (*Oribia haggardi*).

Swahili name, *Taya*.

Still imperfectly known, but distinguished from all the other oribis by the stouter horns, which are strongly ridged for rather more than the basal half of their length. Height at shoulder about 24 inches.

Distribution.—The coast districts of East Africa in the neighbourhood of Lamu. Discovered in 1887 by Mr. J. G. Haggard.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$1\frac{5}{8}$	$2\frac{1}{4}$	2	East Central Africa . . .	Hon. Walter Rothschild.
$1\frac{5}{8}$	$1\frac{1}{8}$	$2\frac{3}{8}$	North end of Lake Albert . . .	Col. Trevor Ternan.
$4\frac{5}{8}$	2	$2\frac{1}{4}$	East Africa . . .	F. J. Jackson, C.B.
$1\frac{4}{16}$	2	$2\frac{1}{4}$	Lake Albert . . .	Col. Trevor Ternan.
$1\frac{4}{16}$	2	$2\frac{5}{8}$	Do.	Do.
$4\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	East Africa . . .	F. J. Jackson, C.B.

¹ Determination provisional.

ZANZIBAR ANTELOPE (*Nesotragus moschatus*).

The two elegant little antelopes included in the genus *Nesotragus* are near relatives of the oribis, from which they are distinguished by the absence of a naked glandular patch below each ear and the want of lateral hoofs. They are further characterised by the horns being directed backwards nearly or quite in the plane of the face, and extending at least as far as the back of the head, as also by the large size of the empty spaces in the skull below the sockets of the eyes, and by the nasal bones. In the present species the horns are short and slender, and the colour, inclusive of the tail-tip, fawn gray. Height at shoulder about 13 inches.

Distribution.—Islets near Zanzibar and adjacent coast from Kilimanjaro to Mozambique.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3½	1½	2	Coral Islands, Zanzibar .	Sir John Kirk, K.C.B.
3½	1¾	1½	Zanzibar	The late Capt. Speke, British Museum.
3½	1½	1½	Do.	Sir John Kirk, K.C.B., British Museum.
2¾	1½	1¾	Do.	Sir Victor Brooke's Collection.

Skull and Horns of Livingstone's Antelope, from a specimen shot by F. Vaughan Kirby.

LIVINGSTONE'S ANTELOPE (*Neotragus livingstonianus*).

Lumswi of the Shupanga.

Intilengana of the Amatonga.

Distinguished from the preceding species by its slightly superior dimensions (height at shoulder, 15 inches), the longer and thicker horns, more rufous coloration, and the blackish upper surface of the tail.

Two specimens killed by F. Vaughan Kirby measured—

	Male.	Female.
Extreme length over all, tip of nose to end of tail	27 $\frac{1}{8}$ ins.	25 $\frac{3}{4}$ ins.
Length of tail	3 $\frac{1}{2}$ "	3 "
Perpendicular shoulder-height	14 $\frac{1}{4}$ "	13 $\frac{1}{8}$ "
" height at croup	14 $\frac{3}{4}$ "	14 $\frac{1}{4}$ "
Girth of neck	6 $\frac{1}{2}$ "	6 "
" behind the shoulder	14 $\frac{1}{8}$ "	13 $\frac{5}{8}$ "

Distribution.—South-East Africa, from Mozambique to Zululand; the form from Zululand being distinguished as *N. livingstonianus zuluensis*.

Length on front.	Circumference.	Tip to Tip.	Locality	Owner.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Shupanga Forest	F. Vaughan Kirby.
4 $\frac{1}{2}$		1 $\frac{3}{4}$	?	F. J. Newnham.
4 $\frac{3}{8}$	2 $\frac{1}{2}$	.	Gungunyana's country	H. T. Glynn, British Museum.
4 $\frac{1}{2}$	...	...	Delagoa Bay	F. H. Barber.

LIVINGSTONE'S ANTELOPE (*Nesotragus livingstonianus*)—*continued*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$-4\frac{1}{4}$	...	...	?	O. R. Dunell.
$-4\frac{1}{8}$	...	...	?	C. T. Jones.
$-4\frac{1}{8}$	...	1	Delagoa Bay	F. C. Selous.
-4	$1\frac{3}{4}$	$1\frac{3}{8}$	?	Julius Jeppe.
-4	...	...	?	C. T. Jones.
-4	$1\frac{3}{4}$	$1\frac{3}{8}$	?	Julius Jeppe.
$3\frac{3}{4}$	$1\frac{3}{4}$	2	?	C. D. Rudd.
$-3\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Zambesi	Sir Edmund Loder, Bart.
$3\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{5}{16}$	Delagoa Bay	Hon. Walter Rothschild.
$3\frac{3}{8}$	$1\frac{1}{2}$	$2\frac{1}{8}$	Do.	G. Richards.
$-3\frac{3}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$	Do.	Julius Jeppe.
$-3\frac{3}{8}$	$1\frac{3}{4}$	$1\frac{5}{8}$	Do.	Mr. Justice Hopley.
$3\frac{5}{8}$	...	...	Do.	Dr. Percy Rendall.
$3\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{5}{8}$	?	Major H. J. Goold-Adams, C.B., C.M.G.
$3\frac{3}{8}$	$1\frac{3}{4}$	$1\frac{3}{8}$	?	F. E. Potter.
$-3\frac{1}{8}$	$1\frac{7}{8}$	$1\frac{3}{4}$	?	A. Ohlsson.
$3\frac{1}{8}$	2	...	Northern Zululand	A. H. Neumann, British Museum.
3	$1\frac{5}{8}$	$2\frac{1}{8}$	Zululand	A. Cameron.

Head of Grysbuck, from a specimen shot by F. C. Selous.

GRYSBUCK (*Rhaphiceros melanotis*).

Isikupi of the Basutos.

From the other members of the oribi group the grysbuck and its cousin the steinbuck are readily distinguished by the horns rising nearly vertically from the skull, in which the open spaces below the eye-sockets are unusually small. Curiously enough, the grysbuck retains the lateral hoofs, which have disappeared in the steinbuck. In addition to this feature, the former is distinguished by the fur showing a large admixture of white, instead of being uniformly coloured. Height at shoulder, 22 inches.

Distribution.—South Africa, extending as far north as the Zambesi and Mozambique.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{1}{8}$	1 $\frac{1}{2}$	1 $\frac{7}{8}$	?	R. A. Cooper.
-4	..	..	Caledon, C.C.	Cape Town Museum.
3 $\frac{8}{16}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	Cape Colony	F. C. Selous. (See illustration.)
-3 $\frac{1}{4}$	...	...	Limpopo	C. T. Jones.
-3 $\frac{1}{4}$	1 $\frac{1}{2}$	2 $\frac{3}{8}$	Knysna, C.C.	Mr. Justice Hopley.
3 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	?	Major H. J. Goold-Adams, C.B., C.M.G.
-3 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	Knysna, C.C.	Mr. Justice Hopley.
-3 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	Komati Poort	F. Vaughan Kirby.
-3	1 $\frac{1}{2}$	2	?	A. Ohlsson.
2 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	?	G. Richards.
-2 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	?	Julius Jeppe.

Head of Steinbuck.

STEINBUCK (*Raphiceros campestris*).

Ishah of the Swahilis.

Impulupudi of the Basutos.

Ingaina of the Swazis.

Phuduhudu of the Bechuanas.

Umgwena of the Matabele.

As mentioned before, this species is at once distinguished from the grysbuck by the absence of the lateral hoofs and the uniform colour of the fur. The general tint of the latter is bright sandy rufous, becoming richer on the head, and frequently with the tip of the muzzle and a horseshoe-mark on the crown brown. Height at withers about $19\frac{1}{2}$ inches.

Distribution.—Africa south of the Zambesi on the east, and the Cunene on the west ; northwards of the Tana to Nyasaland represented by Neumann's steinbok (*R. campestris neumanni*), distinguished by the absence of dark markings on the head. Probably owing to its small size, the steinbuck has managed to escape the fate that has befallen so many of the South African antelopes. Wherever the traveller journeys on the veldt, he is almost certain to meet this species, which may be regarded as the most familiar game animal of the plains. Like many of its kindred, it is independent of water, and can thus exist in the heart of the Kalahari, where water may not occur for a distance of fully fifty miles. The excellence of its flesh renders it a welcome addition to the bag of the hungry

hunter; and in addition to affording sport with the shot-gun, or, more rarely, the rifle, steinbuck may either be hunted with foxhounds or coursed with greyhounds.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-6 $\frac{7}{8}$	...	...	Graffreinett . . .	F. H. Barber.
-5 $\frac{7}{8}$	...	...	Kikumbulin . . .	W. Russell Bowker.
-5 $\frac{7}{8}$	1 $\frac{7}{8}$	3	?	Mr. Justice Hopley.
-5 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	?	J. Whitaker.
-5 $\frac{5}{8}$	2	1 $\frac{1}{2}$	?	Julius Jeppe.
1 5 $\frac{1}{2}$	...	1 1 $\frac{5}{8}$	Kimberley . . .	F. C. Selous.
-5 $\frac{1}{2}$	...	...	?	O. R. Dunell.
5 $\frac{5}{8}$	2	1 $\frac{3}{4}$	E. Africa . . .	E. Gedge.
-5 $\frac{1}{4}$	...	...	?	Cape Town Museum.
-5 $\frac{1}{4}$	1 $\frac{3}{8}$	2 $\frac{7}{8}$	Cape Colony . . .	F. R. N. Findlay.
5 $\frac{5}{8}$	1 $\frac{3}{4}$	2	?	Julius Jeppe.
5	...	2 $\frac{1}{2}$	E. Africa . . .	Sir John Willoughby, Bart.
5	1 $\frac{7}{8}$	2 $\frac{7}{8}$	S.E. Africa . . .	Dr. W. P. Y. Bainbrigge.
-4 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	Do. . . .	James J. Harrison.
4 $\frac{5}{8}$	1 $\frac{1}{2}$	2 $\frac{3}{4}$	Portuguese E. Africa .	F. Vaughan Kirby.
4 $\frac{5}{8}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	S. Africa . . .	G. Richards.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	Mashonaland . . .	Jff. Darling, British Museum.
4 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{5}{8}$	?	Major H. J. Goold-Adams, C.B., C.M.G.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	S. Africa . . .	H. and C. Beddington.
4 $\frac{1}{2}$	1 $\frac{5}{8}$	2 $\frac{5}{8}$	Do. . . .	F. C. Selous.
-4 $\frac{1}{2}$	...	...	Matabeleland . . .	T. E. Buckley.
-4 $\frac{1}{2}$	1 $\frac{7}{8}$	3 $\frac{1}{2}$	Barberton . . .	Dr. Percy Rendall.
4 $\frac{5}{8}$	1 $\frac{5}{8}$	2 $\frac{3}{8}$	Tana Valley . . .	Sir Robert Harvey, Bart.
-4 $\frac{5}{8}$	...	...	Matabeleland . . .	Major A. St. H. Gibbons.
4 $\frac{5}{8}$	1 $\frac{1}{2}$	2	Do. . . .	Rev. Dr. R. J. Nevin.
4 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{3}{4}$	E. Africa . . .	Lord Delamere.
4 $\frac{1}{2}$	1 $\frac{1}{2}$	2	Matabeleland . . .	Major James Grant.
4 $\frac{5}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{4}$	Sudan . . .	Col. Ralph Vivian.
4 $\frac{5}{8}$	1 $\frac{5}{8}$	2 $\frac{3}{8}$	Kaokoland . . .	Capt. F. Cookson.
-4 $\frac{5}{8}$	...	...	?	C. T. Jones.
4 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$	Zululand . . .	Lieut.-Col. Hon. W. Coke.
4	1 $\frac{5}{8}$	2 $\frac{3}{4}$	Matabeleland . . .	Duke of Roxburghe.
-3 $\frac{7}{8}$	2	2	Komati Valley, S.A. .	Count E. Hoyos.

¹ Killed with hounds.

Skull and Head of Male Klipspringer, from specimens shot in Somaliland by Major H. G. C. Swayne.

KLIPSPRINGER (*Oreotragus saltator*).

<i>Alakud</i> of the Somalis.	<i>Ikumi</i> of the Basutos.
<i>Chibila</i> in the Chilala and Chibisa countries.	<i>Klipbok</i> of the Boers.
<i>Ingululu</i> of the Makalakas.	<i>Ligoka</i> of the Zulus and Swazis.
	<i>Njerere</i> in the Batoka country.
	<i>Sass</i> of the Abyssinians.

Not only from the other members of the oribi group, but from antelopes of all kinds, the agile little klipspringer, or "rock-jumper," is distinguished by the peculiar conformation of its hoofs and the structure of its hair. The former are large, cylindrical, blunt, and so situated in regard to the rest of the limb, that the animal walks on what corresponds to their tips in other antelopes, the whole hoof thus rising vertically from the ground. As regards the hair, this may best be compared with that of the musk-deer, having the same brittle, pithy structure. Lateral hoofs are retained; the tail is reduced to a mere rudimentary stump; and the horns of the bucks rise nearly vertically from the head, with a slight forward curvature, and are ringed for their basal third. The speckly olive-gray hue of the fur is too well known to need description. Height at shoulder from about 20 to 22 inches.

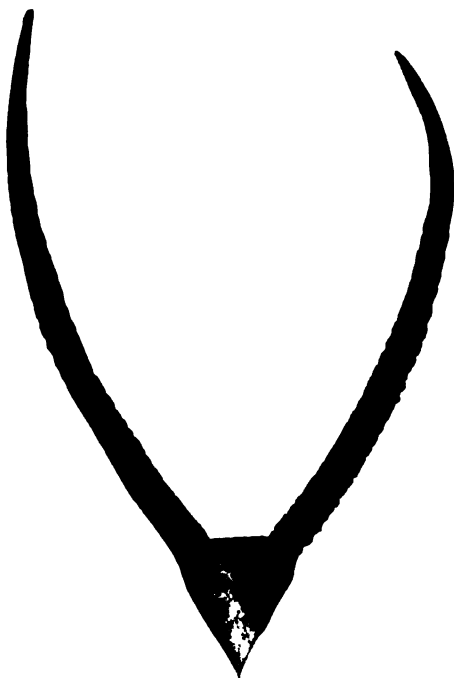
Distribution.—Mountainous and rocky districts in South and East Africa, from the Cape northwards to Abyssinia. Klipspringer-shooting is the best mountain sport to be obtained in Africa; and a pair of

these active little animals bounding, as if made of indiarubber, from rock to rock is a sight never to be forgotten. To bag these exceedingly active and shy little antelopes, the sportsman, especially in the steep mountain ranges of Cape Colony, must, however, be prepared for a long and difficult stalk under a blazing sun. Except when they require its hair for stuffing saddles, the Boers leave the klipspringer alone; which is doubtless one reason that it is still comparatively abundant. Its venison is of excellent quality.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5 $\frac{3}{4}$	2 $\frac{1}{8}$	2 $\frac{7}{8}$	Mashonaland . .	The late H. H. Eyre.
5 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	Transvaal . . .	F. Vaughan Kirby.
4 $\frac{1}{2}$	2 $\frac{3}{16}$	2 $\frac{1}{16}$	Wittberg, Cape Colony	H. A. Bryden.
4 $\frac{1}{2}$	2	3 $\frac{1}{4}$	East Africa . .	E. Gedge.
-4 $\frac{1}{2}$	...	...	Barberton . . .	Dr. Percy Rendall.
4 $\frac{5}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	Matabeleland . .	Hon. R. A. Ward.
4 $\frac{3}{8}$	2	3 $\frac{1}{4}$	S.E. Africa . .	F. C. Selous.
4 $\frac{1}{4}$	2	3 $\frac{5}{8}$	Near Lake Rudolph .	H. S. H. Cavendish.
-4 $\frac{1}{4}$	2 $\frac{1}{2}$	3	Somaliland . . .	C. V. A. Peel.
-4 $\frac{1}{4}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	South Africa . .	A. Ohlsson.
-4 $\frac{1}{4}$	1 $\frac{5}{8}$	2 $\frac{1}{8}$	Do. . .	Mr. Justice Hopley.
-4 $\frac{1}{8}$	2	2 $\frac{1}{2}$	Somaliland . . .	Sir Edmund G. Loder, Bart.
4 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$	North Nyasaland .	James Yule.
4	1 $\frac{1}{2}$	2	East Africa . .	Lord Delamere.
4	1 $\frac{7}{8}$	2 $\frac{1}{8}$	?	Mr. Justice Hopley.
4	2 $\frac{1}{8}$	1 $\frac{1}{4}$	Matabeleland . .	W. W. Ashley.
4	2 $\frac{1}{2}$	1 $\frac{7}{8}$	South Africa . .	H. and C. Beddington.
3 $\frac{7}{8}$	2 $\frac{1}{8}$	2	Do. . .	A. Beit.
3 $\frac{3}{4}$	2	2 $\frac{1}{4}$	East Africa . .	J. Gardiner Muir.
3 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{3}{8}$	Somaliland . . .	Prince Boris Czetwertynski.
3 $\frac{3}{4}$	2	2	Do. . .	T. W. H. Clarke.
3 $\frac{3}{4}$	...	1 $\frac{7}{8}$	Abyssinia . . .	British Museum.
-3 $\frac{3}{4}$	2 $\frac{3}{8}$	3 $\frac{1}{8}$	South Africa . .	Dr. W. P. Y. Bainbrigge.
-3 $\frac{3}{4}$	2	2	Do. . .	Julius Jeppe.

KLIPSPRINGER (*Oreotragus saltator*)—continued.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-3 $\frac{3}{4}$	...	...	Matabeleland . .	J. Brander Dunbar.
3 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{7}{8}$	Somaliland . .	The late W. Babington.
3 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{8}$	Matabeleland . .	Hon. John Ward.
3 $\frac{1}{2}$	2	2 $\frac{3}{4}$	Do. . .	R. A. Cooper.
- ♀ 3 $\frac{1}{2}$	...	...	East Africa . .	F. J. Jackson, C.B.
3 $\frac{8}{8}$	1 $\frac{7}{8}$	2	Abyssinia . .	Viscount Edmond de Poncins.
3 $\frac{1}{4}$	1 $\frac{7}{8}$	2	South Africa . .	G. Richards.
3 $\frac{1}{4}$	...	...	Somaliland . .	Major H. G. C. Swayne.
-3 $\frac{1}{4}$	1 $\frac{3}{4}$	4	?	Dublin Museum.
3 $\frac{1}{16}$	1 $\frac{7}{8}$	2	Abyssinia . .	Viscount Edmond de Poncins.
3	1 $\frac{7}{8}$	2 $\frac{3}{4}$	Somaliland . .	G. D. E. Chapman.
3	1 $\frac{6}{8}$	1 $\frac{3}{4}$	Do. . .	W. W. Ashley.
3	...	...	?	Cape Town Museum.



Horns of Waterbuck, F. H. Barber's specimen.

COMMON WATERBUCK (*Cobus ellipsiprymnus*).

<i>Kooli</i> in the Chilala and Chibisa countries.	<i>M'dongoma</i> or <i>Matutwi</i> in the Barotse country.
<i>Kring-gaat</i> of the Dutch.	Swahili name <i>Koru</i> .
<i>Li Tumogha</i> of the Matabele.	<i>Tumoga</i> of the Bechuanas.

The waterbucks and their near allies the kobs, together with the reedbucks and vaal rhebok, constitute a well-defined group of large or medium African antelopes presenting the following characteristics. They have the muzzle naked, no face-glands, a moderately long tail, well-developed lateral hoofs, and the horns confined to the bucks. In shape and size the horns are variable, being either long or medium, but never spirally twisted, and always with smooth tips, below which they are ridged; usually they are at first inclined somewhat backwards, after which they are curved upwards and more or less forwards, although they may have a sinuous curvature, and in the vaal rhebok are straight. The upper molar teeth are tall and narrow. In the

waterbucks and kobs, which include the largest representatives of the group, there are no naked patches on the head below the ears, the tail is comparatively long, with a slight terminal tuft, and the lateral hoofs are large. A characteristic feature of the skull is the presence of a deep hollow in the forehead. From its allies the true or common waterbuck is recognisable at a glance by the elliptical white ring on the buttocks, which extends downwards to the thighs. Height at shoulder about 43 inches to 53.

Distribution.—Africa north of the Limpopo along the eastern coast region as far as the Shebeyli River in Somaliland; thus including Nyasaland and British and German East Africa. Never, apparently, very abundant, this handsome antelope, whose head and horns form one of the chief prizes of the South African hunter, has had its range much curtailed of late years. Its present strongholds are the unhealthy districts between the Sabi and Zambesi, the affluents of the latter river, and the Chobi, Okavango, and other rivers above Lake Ngami. Although the flesh is uneatable by Europeans, the excellence of the hide for shoe-leather causes the kring-gaat, as it is called by the Boers, to be persistently hunted.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-36½	...	...	Delagoa Bay . . .	F. H. Barber. (See illustration.)
-36½	...	...	South Africa . . .	O. R. Dunell.
-35½	9	14	?	Mr. Justice Hopley.
-34½	...	...	Limpopo Valley . . .	H. T. and A. H. Glynn.
-33½	10½	21½	S.E. Africa . . .	F. Vaughan Kirby.
33½	9½	21½	Do. . . .	Hon. Walter Rothschild.
33	9½	11½	Mashonaland . . .	F. C. Selous, British Museum.
33	8½	24	Do. . . .	J. G. Millais.
-33	8½	17½	Do. . . .	A. Ohlsson.
-33	...	...	Lake Ngami . . .	Cape Town Museum.
32½	9½	21½	South Africa . . .	Sir Victor Brooke's Collection.
31½	9½	24	Zululand . . .	Capt. L. O. Williams.
-31½	8½	21½	North of Pungwe . . .	Count E. Hoyos.
-31½	9	17	?	Julius Jeppe.
31½	8½	21½	?	British Museum.
31½	10½	13½	Pungwe . . .	Earl of Dunmore.

COMMON WATERBUCK (*Cobus ellipsiprymnus*)—*continued*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
31½	9½	19½	?	Sir Edmund G. Loder, Bart.
-31½	..	...	Transvaal . . .	C. T. Jones.
31	...	...	Mashonaland . . .	F. C. Selous.
-31	9½	17	E. C. Africa . . .	James J. Harrison.
30½	8	23½	Pungwe . . .	Capt. Lord Douglas Compton.
30½	8½	25	Do. . . .	R. Hughes.
-30½	9½	16½	E. C. Africa . . .	James J. Harrison.
-30½	9	26	Do. . . .	Julius Jeppe.
30½	9½	23½	Zululand . . .	A. J. Brandon.
-30½	...	...	Macloutsie . . .	Capt. G. F. T. Leather.
30½	8½	13½	Mashonaland . . .	F. C. Selous.
-30	9½	11½	Komati River, S. Africa.	Count E. Hoyos.
29½	9½	12½	Zululand . . .	Hon. Charles Ellis.
29½	9½	21½	Mashonaland . . .	F. C. Selous.
-29½	...	...	Somaliland . . .	Dr. Donaldson Smith.
-29½	9½	19½	Danakil . . .	Prince A. de Lucinge.
29½	9½	...	Zululand . . .	A. H. Neumann.
29	9½	5½	Do. . . .	A. W. Davis.
29	10½	malformed 16	Sabi River . . .	Sir Thomas Fowler, Bart.
29	9½	26	East Africa . . .	E. Gedge.
29	9½	16½	Do. . . .	Major W. H. Williams.
-29	8½	19	Do. . . .	T. E. Buckley.
29	9	16	South Africa . . .	Lieut.-Col. Hon. W. Coke.
29	9	14½	Pungwe . . .	Capt. F. H. Lehmann.
29	9	12½	Do. . . .	R. A. Cooper.
29	8½	19½	Do. . . .	Frank Harris.
-29	8	22½	Do. . . .	C. C. Gouldsmith.
28½	9½	21½	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
28½	8	27	Shiré Valley . . .	H. H. Williams.
28½	8	15½	South Africa . . .	G. H. M. Banks.

COMMON WATERBUCK (*Cobus ellipsiprymnus*)—*continued*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
28½	8½	15½	Pungwe . . .	Viscount Ennismore.
-28½	8½	...	Shiré Valley . . .	Staff-Surgeon J. Dowson, R.N.
-28	10½	8	S.E. Africa . . .	T. E. Buckley.
-28	...	18	East Africa . . .	Sir John Willoughby, Bart.
28	9	18	Matabeleland . . .	Major James Grant.
28	8½	13½	Pungwe . . .	Durban Museum.
28½	8	22½	Do. . . .	H. R. Holden.
27¾	9½	14¾	East Africa . . .	F. J. Jackson, C.B.
-27¾	8¾	10½	Barberton . . .	Dr. Percy Rendall.
27½	8	9½	Zululand . . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
27½	8¾	22	South Africa . . .	D. Norman Ritchie.
27½	8½	18	Pungwe . . .	G. L. Bonham.
27½	8¾	16¾	Barotseland . . .	H. Timmins.
27½	9½	13½	East Africa . . .	J. Gardiner Muir.
27	9½	13	Zululand . . .	A. Cameron.
27	8	15¾	Pungwe . . .	Lord Edward Manners.
27	8½	17½	Danakil . . .	Viscount Edmond de Poncins.
27	8	17¾	Pungwe . . .	Ford G. Barclay.
27	7½	34½	Zambesia . . .	Comdr. A. T. Hunt.
27	9	4½	Matabeleland . . .	W. Crosley.
26¾	9	18½	Pungwe . . .	Capt. G. F. Henry.
26¾	8½	14	Do. . . .	Col. G. A. Percy.
26¾	6½	18½	E. C. Africa . . .	Lord Delamere.
26½	8	11½	Do. . . .	Lord Edward Manners.
-26½	8½	15½	Masailand . . .	Count Scheibler.
-26	8	17½	South Africa . . .	Dublin Museum.
-26	8½	18	Do. . . .	James J. Harrison.
-26	7½	20½	Do. . . .	Dr. W. P. Y. Bainbrigge.
25½	8½	17½	Sudan . . .	Col. Ralph Vivian.
25½	8½	11	East Africa . . .	The late Capt. Speke, British Museum.

COMMON WATERBUCK (*Cobus ellipsiprymnus*)—*continued*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
25½	8½	19½	British Central Africa	J. E. Gough.
25¾	7½	18½	?	Lord Delamere.
25½	8½	13½	East Africa	Sir Robert Harvey, Bart.
25½	8	13½	Do.	H. C. V. Hunter.
24½	7½	9½	Somaliland	W. D. James.
23.6	8.13	10.1	British East Africa	Prince Henry of Liechtenstein.
22¾	6½	15½	Somaliland	Major H. G. C. Swayne.
22½	7½	12½	Do.	A. H. Straker.
22	7½	9½	Do.	Prince Demeter Ghika.
21½	7½	9½	Do.	Count E. Hoyos.

Head of Common Waterbuck, from a specimen shot in Somaliland.

Skull of Male Sing-sing Waterbuck, from a specimen in the British Museum.

SING-SING WATERBUCK (*Cobus defassa*).

Distinguished from the common water-buck (*C. ellipsiprymnus*) by the presence of a large white patch on the lower part of the buttocks, instead of a white elliptical ring extending higher up. Four more or less distinct local races of this species may be recognised. First, the West African sing-sing (*C. defassa unctuosus*), of Senegal and Gambia, characterised by its rufous colour and the small amount of white in the region of the eye. Second, Crawshay's sing-sing (*C. defassa crawshayi*), from British Central Africa, with a dusky coloration. Third, Penrice's sing-sing (*C. defassa penricei*), from the interior of Benguela, Angola, in which the colour is so dark as to be almost black.

And, fourth, the defassa sing-sing (*C. defassa typicus*), extending from Western Abyssinia through Sennar, Kordofan, and the valley of the White Nile to Uganda and British and German East Africa, in which the ears are longer and more pointed, and there is more white in the region of the eye than in the other races; the general colour being rufous. The four races are frequently regarded as distinct species, but they are so evidently local modifications of a single somewhat variable form that it appears far preferable to include them all under a single specific heading.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ -35½	...	...	Near Toru . . .	Major C. G. H. Sitwell.
-29½	8½	29½	Sudan . . .	Count T. Palffy.
-29	9½	17½	?	Dublin Museum.
-29	8½	28½ ¹	Upper Basaland, Abyssinia	J. Menges.
-29	8	6½	?	Julius Jeppe.
-27½	8½	9½	Sudan . . .	Count T. Palffy.
27½	8½	13½	?	British Museum.
27½	7½	18½	Atbara Valley, Abyssinia .	Do.
-27½	9	12	East Africa . . .	Lord Delamere.
27½	7½	18½	Atbara Valley, Abyssinia .	British Museum.
27	8	15½	Kavalli, Lake Albert .	Col. Trevor Ternan.
26½	7¾	15½	Uganda . . .	The late Captain Speke, British Museum.
26½	8½	15½	East Africa . . .	E. Gedge.
-26	7½	13½	Borders of Lake Tchad .	Paris Museum.
25½	9	15½	Bahr-el-Salam, Sudan .	Lieut.-Col. Hon. W. Coke.
25½	8½	16½	Kikuyu . . .	E. Russell.
25½	8½	13½	British East Africa .	Hon. Walter Rothschild.
24½	8½	16½	Molo River . . .	G. E. Smith.
23½	8	8½	?	Lord Delamere.

¹ Mr. F. R. Hicks favours me with this measurement.

DEFASSA SING-SING (*Cobus defassa unctuosus*).

See page 178.

Height at shoulder, 47 to 48 ins.—Major A. J. Arnold, D.S.O.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
24 $\frac{3}{4}$	8 $\frac{1}{2}$	...	Gambia	Julius Jeppe.
-24 $\frac{1}{2}$	9	12	Nigeria	Dr. Percy Rendall.
24	7 $\frac{1}{4}$	15 $\frac{3}{4}$	Do.	P. A. Clive.
23 $\frac{3}{4}$	7 $\frac{1}{4}$	14 $\frac{1}{2}$	Do.	F. Swanzy.
23 $\frac{3}{4}$	7 $\frac{1}{2}$	13 $\frac{1}{4}$	Do.	Major A. J. Arnold, D.S.O.
23	7	16	Do.	Do.
23	7	13 $\frac{3}{4}$	Boussa, Nigeria . . .	A. W. M. Brodie.
22 $\frac{7}{8}$	8 $\frac{1}{2}$	10 $\frac{3}{4}$	Nigeria	Sir Edmund G. Loder, Bart.
22	7	17 $\frac{1}{4}$	Do.	Major G. S. C. Jenkinson.

PENRICE'S SING-SING (*Cobus defassa penricei*).

See page 178.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29	8 $\frac{3}{4}$	18 $\frac{1}{2}$	Benguela	G. W. Penrice.
-28 $\frac{1}{4}$	8 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	A. Ohlsson.
28	8	22 $\frac{1}{2}$	Do.	G. W. Penrice.
24 $\frac{1}{2}$	8	9 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.
20 $\frac{1}{4}$	6 $\frac{7}{8}$	12 $\frac{1}{4}$	Do.	Julius Jeppe.

Horns of Mrs. Gray's Waterbuck, from Lieut.-Col. Hon. W. Coke's specimen.

MRS. GRAY'S WATERBUCK (*Cobus maria*).

This species is the last of the typical group of *Cobus*, in all the members of which the size is large, the fur grizzled, and the neck maned. From the preceding species Mrs. Gray's waterbuck differs by the presence of an hour-glass-shaped white area on the back of the neck, and the form of the horns, which are highly sinuous and inclined backwards; the general colour of the fur being dark reddish brown. Height at shoulder apparently from 35 to 40 inches.

Distribution.—The swamps bordering the White Nile and its tributaries.

Very rare in collections, being represented by complete specimens only in the museums of Vienna and Berlin. It was discovered by Heuglin, but has been confounded with the very different white-eared kob.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
30½	6½	17	?	Berlin Museum.
29½	6½	12	?	Hon. Walter Rothschild.
26½	6½	13½	Arwan, Bahr-el-Ghazal	The late Consul J. Petherick, Brit. Mus.
26½	6½	12	White Nile.	Lieut.-Col. Hon. W. Coke.

WHITE-EARED KOB (*Cobus leucotis*).

The smaller antelopes included in the genus *Cobus* may be popularly termed kobs, and differ from the water-bucks not only by their inferior size, but by the uniformly rufous hue of the upper parts, and the absence of a mane on the neck. From its allies the present species is sufficiently distinguished by the white outer surface of the ears and upper part of the head, including the region of the eyes. Height at shoulder about 34 or 35 inches.

Distribution.—The region of the Upper Nile, including the Sobat, Bahr-el-Ghazal, and their tributaries, and extending to the Niam-Niam country. The first known example was sent to Berlin by the German artist and traveller Werne, who obtained it in Sennar.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
21 $\frac{1}{8}$	7 $\frac{1}{8}$	13 $\frac{1}{8}$	White Nile . .	Paris Museum.
20	7	7 $\frac{1}{2}$	Do. . .	Berlin Museum.
19 $\frac{1}{8}$	6 $\frac{3}{8}$	7 $\frac{1}{4}$	Bahr-el-Ghazal . .	British Museum.
19 $\frac{1}{8}$	5 $\frac{1}{8}$	9 $\frac{1}{2}$	Do. . .	The late Consul J. Petherick, British Museum.
17 $\frac{1}{2}$	6	7 $\frac{1}{4}$	?	Sir Victor Brooke's Collection.

Frontlet and Horns of Buffon's Kob.

BUFFON'S KOB (*Oobus cob*).

In common with the Uganda kob and the puku (*C. vardonii*), this species has the back of the ears rufous like the body; and it agrees with the latter of these in having the horns less than twice the length of the head, the hair short, and the front of the fore-legs black; its peculiar distinctive features being the presence of a white line over each eye and its comparatively small size, the approximate height at the shoulder being from 32 to 33 inches.

Although this species was known to the French naturalist Buffon, it is only of late years that its affinities have been fully worked out. The puku differs from both this species and the under-mentioned sunu by its much longer hair and the absence of the black down the front of the legs.

Distribution.—West Africa, from the Gambia to Nigeria.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
19½	6½	7½	Nigeria . . .	Captain A. H. Festing.
18½	5½	7½	Do. . . .	Captain J. S. Brogden.
17½	...	...	Do. . . .	Major A. F. Mockler-Ferryman.
16½	6	7	Do. . . .	Major A. J. Arnold, D.S.O.

BUFFON'S KOB (*Oobus cob*)—continued.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
16½	5½	8	Ibi District .	Carl Jeppe.
16½	6	7½	Do. . .	Mr. Justice Hopley.
16	5½	7½	?	Sir Edmund G. Loder, Bart.
15½	5½	7	Ibi District . .	Julius Jeppe.
15½	6½	8	Gando, Western Sudan	J. W. Carroll.
13½	6	7½	Gaboon . .	Hon. Walter Rothschild.
9½	5	3	Gambia . . .	A former Earl of Derby, British Museum.
8	4½	4½	Do. .	Do.

Head of Lichi.

Skull of Uganda Kob, from a specimen shot by F. J. Jackson.

UGANDA KOB (*Cobus thomasi*).

The East African representative of Buffon's kob, from which it is distinguished mainly by its superior size, and the presence of a complete white ring round each eye, instead of having only a white line above the same. General colour rich fulvous, with the muzzle, lips, chin, under parts, and inner surfaces of upper portion of fore-legs and thighs white; front of fore-legs with a black line, and hind-legs with a similar line, which does not, however, ascend within some distance of the hocks. Height at shoulder about $35\frac{1}{2}$ inches.

Distribution.—East Africa, from Kavirondo to Uganda.

Native name, *Sunu* or *N'Sunu*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{1}{2}$	7	9 $\frac{1}{2}$	North end of Lake Albert	Col. Trevor Ternan.
19 $\frac{1}{2}$	7	9 $\frac{1}{2}$	Victoria Nyanza	E. Gedge.
18 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Lake Albert	Col. F. D. Lugard, C.B., D.S.O.
18 $\frac{1}{2}$	..	..	Lake Victoria	Major W. H. Williams.
18	7 $\frac{1}{2}$	11 $\frac{1}{2}$	Uganda	E. Gedge.
17 $\frac{1}{2}$	6 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	M. F. Gage.
17 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	Kavirondo	F. J. Jackson, C.B.
17 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Rowland Ward.
17 $\frac{1}{2}$	7	5	Do.	F. J. Jackson, C.B., British Museum.
17	5 $\frac{1}{2}$	9 $\frac{1}{2}$	East Africa	Paris Museum.
16 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	Uganda	Sir Edmund G. Loder, Bart.
16	6 $\frac{1}{2}$	10	East Africa	F. H. Barber.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	Julius Jeppe.
14 $\frac{1}{2}$	6	9 $\frac{1}{2}$	Victoria Nyanza	C. F. S. Vandeleur, D.S.O.



F. H. Barber's Lichi Horns.

LICHI or LECHWE (*Cobus lichi*).

<i>Lechwi</i> in the Barotse and Lake	<i>Leché</i> , Lee-gwee of the Makololo.
Ngami countries.	<i>Inya</i> of the Masubias.
<i>Njha</i> in the Chilala and Chibisa	<i>Oonya</i> of the Makubas.
countries.	

In this handsome antelope the horns are longer than in its allies, considerably exceeding twice the length of the head, while the front of the fore-legs is black, and the hair long. Height at shoulder, 40 or 41 inches.

Like the puku, this kob was discovered by Livingstone and his companions Oswell and Murray during their journey to Lake Ngami in 1849. In point of size it approximates to the true waterbucks, from which, however, in addition to the features already mentioned, it may always be distinguished by its lighter and more graceful build. The general colour is fulvous, of a lighter tint than in the Uganda kob.

The lichi affords excellent and often exciting sport for the gunner. Seldom found very far from water, this antelope is most abundant in the lagoons and swamps created by the annual rising of the Upper

Zambesi, the Botletli, Chobe, Tamulakan, and other rivers of the interior, in localities where the surrounding flats are inundated for some part of the year. The lichi seldom ventures into the deep rivers from fear of the crocodiles, but among the reed beds, the shallow lagoons, and flooded flats it is a familiar figure. It is often to be found, in the less accessible regions, in vast herds. An excellent swimmer, it can progress by a succession of splashing bounds at great speed through the lagoons and shallows. It is extremely tenacious of life, and requires very straight powder. The thick rufous-yellow coat of the lichi is extremely handsome, and the skin is greatly prized by the natives.

Distribution.—Zambesia, reaching northwards to Lake Mweru, and to Lake Ngami towards the south-west.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-33½	7	26½	Lake Bangweolo	Poulett-Weatherley.
-28½	...	...	Zambesia	F. H. Barber. (See illustration.)
-28	...	...	?	T. Poole.
27½	8	14	Okavango Valley	Major H. J. Gould-Adams, C.B., C.M.G.
27½	10½	19½	Chobe Valley	F. C. Selous, British Museum.
27½	8	14½	Do.	F. C. Selous.
-27	7½	14	Okavango Valley	Sir Edmund G. Loder, Bart.
-26½	9	20½	?	Julius Jeppe.
26½	8½	21	South Africa	A. Beit.
-26½	6½	16	?	Mr. Justice Hopley.
26½	8	15 (about)	Linyanti, Chobe Valley	F. C. Selous.
25½	7½	12½	?	G. Richards.
-25½	7½	18	Zambesia	T. E. Buckley.
-25½	7½	13½	Do.	Dr. Holub, Paris Museum.
-25½	7½	16½	?	Julius Jeppe.
-25½	7½	14½	Lake Ngami	Dr. Percy Rendall.
25½	7½	11½	?	Mr. Justice Hopley.
24½	7	19½	?	R. A. Cooper.
24½	7½	11½	South Africa	Hon. Walter Rothschild.
24½	7½	13½	Zambesia	The late J. S. Jameson.
-24½	...	...	Do.	C. T. Jones.
24	7½	12½	?	A. Ohlsson.
23½	7½	14½	Chobe Valley	F. C. Selous.
-23	...	...	Do.	O. R. Dunell.
23	9	9	Do.	E. Gedge.
22½	6½	12½	Barotseland	R. T. Coryndon.

Head of Puku, from a specimen in the British Museum.

PUKU (*Cobus vardonii*).

Impookoo of the Masubias.

Pookoo in the Lake Ngami country.

Muntinya in the Barotse country.

Señla in the Chilala and Chibisa countries.

From the other small kobs with the back of the ears rufous, the puku is distinguishable at once by the uniformly foxy colour of the fore-legs, as well as by the greater length of the hair, especially in the region of the back and loins, where it has a tendency to curl. General colour reddish-yellow. Height at shoulder about 39 or 40 inches.

Distribution.—Mainly confined to a narrow belt of country extending along the southern bank of the Chobe for about sixty miles from its junction with the Zambesi. The herds are small, seldom including more than ten or a dozen individuals.

PUKU (*Cobus vardonii*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	8½	12½	Luswesi Valley . .	F. Smitheman.
19½	6¾	8½	South Africa . .	J. Carr Saunders.
-18½	...	...	Njoko Valley . .	Major A. St. H. Gibbons.
18¾	6¾	9½	Barotseland . .	R. T. Coryndon.
-18	6½	9	Luwulé Valley, Congo Free State	Poulett-Weatherley.
18	6½	8¾	Luapulu Valley . .	F. Smitheman.
17½	6½	7	Bangweulo . .	Do.
17½	6¾	5½	Barotseland . .	R. T. Coryndon.
-17½	7	6½	Choma Valley, B.C.A.	R. H. Ferrers Stranack.
17¾	6½	18 malformed	Kabampo Valley . .	Major H. J. Goold-Adams, C.B., C.M.G.
16¾	6½	8¾	Do. . .	Do.
-16¾	6½	7½	Luwulé, B.C.A. . .	Poulett-Weatherley.
-16½	7	6½	Choma Valley, B.C.A.	Julius Jeppe.
16½	6½	7½	South Africa . .	British Museum.
16	6½	6¾	South bank of Chobe Valley	F. C. Selous.
16¾	6¾	5½	Choma Valley, B.C.A.	Mr. Justice Hopley.
16	5½	4¾	West Nyasaland . .	C. C. Bowring.
-16	6½	8	?	A. Ohlsson.
¹ -15¾	...	...	Njoko Valley . .	R. T. Coryndon.
15¾	6½	5½	British Central Africa	Rowland Ward.
15¾	6½	6½	Chobe Valley . .	F. C. Selous.
15½	6	10	South Africa . .	J. Carr Saunders.
² -15½	...	...	Njoko Valley . .	R. T. Coryndon.
15	6½	6½	Zambesia . .	T. E. Buckley.
³ -15	..	...	Njoko Valley . .	R. T. Coryndon.
14½	6½	7½	Lofu Valley, B.C.A. .	John Yule.
14½	6½	3½	British Central Africa	Julius Jeppe.
14½	6½	5½	Chobe Valley . .	F. C. Selous, British Museum.

¹ Weight as he fell, 177 lbs.

² Weight as he fell, 185 lbs.

³ Weight as he fell, 196 lbs.

Head of Vaal Rhebok.

GRAY or VAAL RHEBOK (*Pelea capreolus*).

Iliza of the Swazis.

Pshiatla of the Basutos.

Peeli of the Bechuanas.

The short, upright, straight, and slender horns, together with the somewhat woolly nature of the hair, serve to differentiate the vaal rhebok from the antelopes of the kindred genera. The tail, like that of the reedbucks, is short and bushy; the ears are tall and narrow; the build is slight and graceful; and the general colour is uniformly pale gray, tending somewhat to fawn on the head and limbs. Height at shoulder about 29 or 30 inches. The chief essential distinctions between this antelope and the reedbucks are the form of the horns and the absence of the bare patches below the eyes.

Distribution.—The open hilly districts of Africa south of the Zambesi.

In the mountain ranges of the eastern and northern districts of Cape Colony, and thence onwards to the Zambesi, the vaal rhebok affords good and exciting sport. And although its somewhat stiff

and stilty appearance is not at first suggestive of unusual activity, yet the pace and regularity with which a party of six or eight of these antelopes will race up the steep flank of a mountain are calculated to remove any doubts on this point. The most peculiar feature of the vaal rhebok is the soft and woolly nature of the gray coat; the horns afford but insignificant trophies, and the flesh is of decidedly poor quality for the table.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-11½	...	...	Spitzkop .	F. H. Barber.
-11½	...	...	Cape Colony .	Cape Town Museum.
-11	...	...	?	M. E. Bowker.
10½	2	2½	Basutoland .	Julius Jeppe.
-10½	2½	4½	Transvaal .	H. T. and A. H. Glynn.
-10½	...	...	Cape Colony .	Cape Town Museum.
-9½	2½	2½	?	Julius Jeppe.
-9½	...	...	Transvaal .	C. T. Jones.
-9½	2	4½	Basutoland .	Sir A. Milner.
9½	2½	2½	?	Dr. Oakshott.
9	2½	2½	?	Mr. Justice Hopley.
-8½	2½	Single horn	Barberton .	Dr. Percy Rendall.
-8½	2½	3½	?	A. Ohlsson.
8½	2½	2½	Cape Colony .	R. H. Venables-Kyrke.
8½	2½	2½	South Africa .	The late Dr. Burchell, British Museum.
8½	2½	2	?	G. Richards.
8½	2	3½	?	Sir Edmund G. Loder, Bart.
8½	2	2½	?	F. C. Selous.
-8½	2½	3½	?	Dr. W. P. Y. Bainbrigge.
-8	2	3	Mauchberg .	F. Vaughan Kirby.
7½	...	...	?	O. R. Dunell.
7½	2½	3½	?	Hon. Walter Rothschild.
7½	2½	3	?	H. Atkinson.
7½	2½	3½	Basutoland .	A. Beit.
7	2	2½	?	Capt. H. A. Livingstone.

Head of Common Reedbuck.

COMMON REEDBUCK (*Cervicapra arundinum*).

<i>Bemba</i> of the Masaras.	<i>Mziki</i> of the Zulus and Matabele.
<i>Inzeegee</i> of the Amandebele.	<i>Natafwi</i> in the Mashukulumbwi country.
<i>Im-vwee</i> of the Masubias.	<i>Mutobo</i> in the Barotse country.
<i>Um-vwee</i> of the Makubas.	<i>Sibughat</i> in the Lake Ngami country.
<i>Inhlango</i> of the Swazis.	<i>Mpoyo</i> in the Chilala and Chibisa country.
<i>Iklabu</i> of the Basutos.	
<i>Impoyo</i> of the Lower Zambesi tribes.	

All the reedbucks, as the members of the genus *Cervicapra* may be collectively termed, differ from the waterbucks and kobs by their inferior

size, lighter build, and the presence of a completely bare or very short-haired patch on each side of the head immediately beneath the ear. The tail, too, is more bushy and shorter, the lateral hoofs are relatively smaller, and the horns, which are of medium length and stoutness, curve regularly upwards, and in some cases also forwards. The present species, the true reitbok of the Boers, is the largest of the genus, standing about 36 or 37 inches at the shoulder; and has the ear-patch completely bare, and the horns inclining markedly forwards. Length from nose to tail 37 inches in a specimen shot by Dr. Percy Rendall.

Distribution.—South Africa, extending as far north as Angola on the west, and to Mozambique on the east coast. Although formerly numerous in the eastern districts of Cape Colony and Natal, reedbuck have now become scarce in South Africa, and it is not till Khama's country is reached that they are met with in any numbers. As their name implies, reedbuck frequent the reed-brakes fringing so many African rivers; and some of the rivers where they are still fairly abundant are the Lotsani in Bamangwato and those of Ngamiland and the country between Mashonaland and the east coast. They are generally met with in small family parties; and when excited or alarmed utter a characteristic shrill whistle. As their flesh is of fair quality, and their shooting by no means difficult, they are much sought after by sportsmen.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ —18	...	...	S. Africa	F. Vaughan Kirby.
—17½	6½	17½	Barotseland	Percy C. Reid.
—16½	6½	19½	Mpimbi, B.C.A. . . .	Major F. Trollope.
—16	5½	11½	S. Africa	A. Ohlsson.
15½	6½	10½	Do.	C. D. Rudd.
15½	6½	14½	Do.	British Museum.
—15½	6½	10½	Zululand	F. R. N. Findlay.
² 15½	6½	13½	Transvaal	Julius Jeppe.
15½	6½	...	South Africa	The late J. S. Jameson.
—15½	...	...	Nyoko Valley, B.C.A. .	Major A. St. H. Gibbons.
—15½	6½	15½	Transvaal	F. Vaughan Kirby.

¹ This was seen and measured by Mr. Kirby. It had one horn only; the other was shot off.

² Abnormal head.

COMMON REEDBUCK (*Cervicapra arundinum*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-15½	...	16	?	Lord David Kennedy.
-15½	...	...	Damaraland . . .	Cape Town Museum.
-15½	...	...	?	F. H. Barber.
15½	6½	11½	Manica Plateau, N. of Zambesi	F. C. Selous.
15	6½	9½	Mashonaland . . .	Sir John Willoughby, Bart.
15	6	12½	Barotseland . . .	H. Timmins.
-15	...	...	?	H. T. and A. H. Glynn.
-15	6½	9½	?	T. E. Buckley.
-15	...	...	?	O. R. Dunell.
14½	6	15½	Zomba, B.C.A. . . .	C. C. Bowring.
-14½	6½	10½	Sabi Flats	Dr. Percy Rendall.
14½	7½	9½	?	Hon. Walter Rothschild.
14½	6½	7½	?	Sir Edmund G. Loder, Bart.
14½	6½	12½	Mashonaland	A. Eyre.
14½	5½	16½	S. Africa	Lieut.-Col. Hon. W. Coke.
14½	5½	11½	British Central Africa .	J. E. Gough.
-14½	...	...	Transvaal	C. T. Jones.
14	6½	11½	Barotseland	R. T. Coryndon.
13½	5½	11½	S. Africa	W. A. Edmonds.
13½	6	10½	Do.	R. A. Cooper.
13½	6	8½	Pungwe	H. R. Holden.
13½	6	12	Northern Rhodesia . .	F. Smitheman.
13½	6	9½	?	Hon. Walter Rothschild.
13½	6½	6	Pungwe	Viscount Ennismore.
13½	6½	6½	S. Africa	Major-General Sir F. C. Carrington, K.C.B., K.C.M.G.
-13½	5½	12½	Matabeleland	J. Brander Dunbar.
13½	7½	11½	Zululand	A. Cameron.
13½	6½	9½	S. Africa	G. Richards.
-13	7	7½	Do.	James J. Harrison.

COMMON REEDBUCK (*Cervicapra arundinum*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-13	6½	10½	?	Mr. Justice Hopley.
12½	5½	8	Zululand	Capt. L. O. Williams.
12½	5½	8½	Busi Valley	E. S. Grogan.
-12½	4½	11	Nyasaland	Major P. W. Forbes.
12½	6½	8½	Near Buby River	A. M. Sagar-Musgrave.
12½	5½	9½	Zambesia	Comdr. A. T. Hunt.
12½	6	6½	S. Africa	F. E. Potter.
12½	6	9½	Pungwe	Capt. G. F. Henry.
12½	5½	13½	Do. . . .	R. K. Micklethwait.
12	6½	8½	Do. . . .	Capt. F. H. Lehmann.
12	5½	9½	Do. . . .	Hon. T. Thynne.
12	6	7	Do. . . .	Col. G. A. Percy.
12	5½	9½	?	Julius Jeppe.
12	5½	10½	S. Africa	Montrose Cloete.
11½	5½	10½	Benguela	G. W. Penrice.
11½	5	9	Pungwe	C. C. Gouldsmith.
11½	6	13	Do. . . .	Count E. Hoyos.
11½	7	9½	Do. . . .	P. B. Vander-Byl.
-11½	6½	9½	?	Dr. W. P. Y. Bainbrigg.
11	6½	11½	Zululand	A. J. Brandon.
10½	6	8½	Pungwe	Lord Edward Manners.
10½	5	6	Do. . . .	G. L. Bonham.
10½	4½	6	Do. . . .	G. Micklethwait.

BOHOR REEDBUCK (*Cervicapra bohor*).*Boroufa* of the Gallas.*Porhé* of the Swahilis.

From the common reedbuck (*C. arundinum*) the present species is chiefly distinguished by its smaller size (height at shoulder about 31 inches), while it is considerably larger than either of the other three members of its genus. Young animals have the horns more hooked at their tips than is the case with the common reedbuck, but with advancing age even this point of distinction becomes little apparent, owing to the wearing away of the tips of the horns. Both the head and body are more uniformly fawn-coloured than in the common species.

Viscount Edmond de Poncins says:—"These antelopes are very numerous in the Galla country near Mount Yokoila; they like open grassy plains more or less dotted with the small mimosa bushes and are found in small herds of from four to eight, sometimes even fifteen or twenty. They are not very wild and may easily be stalked at less than 200 yards in the middle of the day. Old males frequently are found in the long grass quite alone, when if disturbed they gallop through the grass, jumping very high; on the plains they go easy and fast without jumping. The flesh is not bad eating, and the Gallas are very keen about getting the skins. Weight about 80 lbs."

A female shot by him measured from nose to root of tail $51\frac{1}{4}$ inches; height at shoulder, $31\frac{1}{2}$ inches; round the body, 30 inches.

A good male shot in the Galla country south of the Shoa, by the same sportsman, measured from nose to root of tail $57\frac{1}{2}$ inches; tail, $6\frac{1}{4}$ inches; height at shoulder, $34\frac{1}{4}$ inches; round the body, $34\frac{3}{4}$.

Distribution.—From Abyssinia through East Africa as far south as Kilimanjaro. Discovered by Rüppell in Abyssinia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$13\frac{3}{4}$	$5\frac{1}{2}$	$8\frac{1}{2}$	East Africa . . .	British Museum.
$13\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{1}{2}$	Do.	Major J. R. Macdonald.
$12\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	Do.	Sir John Kirk, K.C.B., British Museum.
$10\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{2}$	Do.	Sir Robert Harvey, Bart.
$-9\frac{7}{8}$	$4\frac{1}{2}$	$3\frac{3}{4}$	Galla country . . .	Viscount Edmond de Poncins.
$-9\frac{1}{4}$	$5\frac{1}{2}$	$6\frac{1}{4}$	Do.	Do.
$9\frac{1}{4}$	$4\frac{1}{2}$	$5\frac{1}{2}$	Usongola	Col. F. D. Lugard, C.B., D.S.O.

BOHOR REEDBUCK (*Cervicapra bohor*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
9 $\frac{1}{8}$	5 $\frac{3}{8}$	8 $\frac{1}{2}$	Sudan	The late Dr. Burchell, British Museum.
9 $\frac{1}{8}$	4 $\frac{1}{8}$	4 $\frac{5}{8}$	Masailand	H. C. V. Hunter.
-9 $\frac{1}{8}$	5 $\frac{1}{8}$	5 $\frac{7}{8}$	Galla country	Prince de Lucinge.
9	5 $\frac{1}{4}$	3 $\frac{1}{8}$	Zanzibar	Sir John Kirk, K.C.B.
9	5	3 $\frac{3}{4}$	Ganda, Nigeria	J. W. Carroll.
-9	6	5	Shoa, Abyssina	Prince de Lucinge.
8 $\frac{3}{4}$	5	3 $\frac{7}{8}$	East Africa	Sir Robert Harvey, Bart.
8 $\frac{3}{4}$	4 $\frac{7}{8}$	3 $\frac{1}{2}$	Masailand	H. C. V. Hunter.
8 $\frac{1}{2}$	5 $\frac{3}{8}$	5	East Africa	R. P. Carroll.
8 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
8 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	Unyoro	Col. Trevor Ternan.
8 $\frac{1}{8}$	4 $\frac{3}{4}$	2 $\frac{1}{2}$	Masailand	H. C. V. Hunter, British Museum.
7 $\frac{3}{4}$	4 $\frac{7}{8}$	2 $\frac{3}{4}$	East Africa	F. J. Jackson, C.B.
-7 $\frac{3}{4}$	5 $\frac{1}{8}$	6	Do.	Julius Jeppe.

Head of Mountain Reedbuck.

MOUNTAIN REEDBUCK or ROOI RHEBOK (*Cervicapra fulvornula*).

Inhlang-amatshe of the Swazis and Zulus.

This and the nagor are the two smallest representatives of the reedbucks, both measuring about 28 inches at the shoulder. The present one is specially distinguished by the absence of a distinct forward hook to the tips of the horns, and the general grayish fawn colour of the fur, which has, however, in some cases a more or less distinctly rufous tinge.

Distribution.—Eastern Africa to the south of the Zambesi, particularly Natal, Zululand, and Bechuanaland ; represented farther north by the under-mentioned form. The rooi (red) rhebok differs from the typical representative of its genus in being an inhabitant of the basal slopes of mountains, at a lower level than the tract frequented by the vaal rhebok. They are generally found in small troops of a dozen head or less ; and from their active habits and the difficult nature of the ground they frequent, afford excellent stalking. Although rare in most of the Transvaal, good bags of this antelope have been made in the western districts of that country. In the neighbour-

hood of the tributaries of the Limpopo, on the Mabube, Tamulikan, Machabe, Sunta, and Chobe rivers, as well as the tributaries of the Zambesi east of the Victoria Falls, and throughout Mashonaland and Matabeleland, rooi rhebok are still very abundant. Those reported from the Manica plateau, north of the Zambesi, may be the so-called Chanler's reedbuck.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-8½	3½	4½	Transvaal . . .	F. R. N. Findlay.
7½	4½	4½	S. Africa . . .	Hon. Walter Rothschild. (Shot by F. C. Selous.)
-7½	4½	4	Transvaal . . .	F. Vaughan Kirby.
-7½	4	3½	Lebombo Range, S.A.	Count E. Hoyos.
-7½	...	...	?	H. T. and A. H. Glynn.
7½	4½	3	Zululand . . .	A. H. Neumann.
-7½	...	...	?	O. R. Dunell.
-7½	4½	2½	?	Mr. Justice Hopley.
-7½	4½	5½	?	Julius Jeppe.
7	3½	4½	Zululand . . .	A. Cameron.
6½	4½	4½	?	Bloemfontein Museum.
6½	4½	4½	?	F. E. Potter.
-6½	3½	3½	?	Mr. Justice Hopley.
6½	4	3½	Zululand . . .	Lieut.-Col. Hon. W. Coke.
-6½	3½	4½	Barberton . . .	Dr. Percy Rendall.
-6½	4	3½	?	Dr. W. P. Y. Bainbrigge.
6½	4½	3½	Zululand . . .	A. J. Brandon.
-6½	...	...	?	C. T. Jones.
-6½	4½	4	?	A. Ohlsson.
-6	3½	2½	Swaziland . . .	T. E. Buckley.
6	4	3½	Zululand . . .	Captain L. O. Williams.

LYDENBURG REEDBUCK (*Cervicapra fulvorufula subalpina*).

The reedbuck discovered by Mr. Vaughan Kirby in the Lydenburg range of the Transvaal departs from the ordinary type of the mountain reedbuck in exhibiting a tendency to partial albinism. Whether this peculiarity entitles it to be regarded as a distinct race must, for the present, remain a moot point.

Head of Chanler's Reedbuck. From a specimen shot by W. Astor Chanler.

CHANLER'S REEDBUCK (*Cervicapra fulvornfula chanleri*).

A reedbuck from East Africa described by the Hon. Walter Rothschild from a single skin, as a distinct species, appears to be nothing more than a local race of the rooi rhebok, from which it is even doubtful whether it should be separated as a sub-species. In the type specimen the nose shows a dark streak like the one often seen in the rooi rhebok and common reedbuck. Other skins have been obtained by Mr. F. J. Jackson, C.B.

Distribution.—The mountainous districts of British East Africa to the east of Mount Kenia and adjacent regions. By Mr. H. S. H. Cavendish these antelopes were seen in the Boran country.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
5½	4	4	?	Lord Delamere.
5½	3½	4½	?	Major A. E. Smith.
5½	3½	3½	Zombènè Range.	W. Astor Chanler.

NAGOR REEDBUCK (*Cervicapra redunca*).

Distinguished from the mountain reed buck (with which it agrees approximately in size) by the distinct forward curvature of the tips of the horns, so as to form a hook. General colour uniformly bright fawn, without darker markings on the limbs; tail only slightly bushy, fawn-coloured above and white beneath.

Distribution.—Senegal and Gambia.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
9½	5	3½	Ganda, Nigeria . .	J. W. Carroll.
8	5½	3½	Ibi, Benue River, West Africa	Julius Jeppe.
8	6	7½	West Africa . .	Hon. Walter Rothschild.
8	5	5½	Gambia . . .	Guy H. Sangster.
7½	5½	2	?	Sir Edmund G. Loder, Bart.
6½	4½	2½	Ibi	Capt. A. H. Festing.

Skull and Horns of Blackbuck. From Mr. A. O. Hume's specimen.

BLACKBUCK or INDIAN ANTELOPE (*Antilope bezoartica*).

Although in former days almost or quite all of the then known species of antelope was included in the genus *Antilope*, the extent of the latter has been gradually whittled down until it comprises the Indian blackbuck alone. In addition to being the sole representative of the genus, this animal is also the type of a sub-family or group of antelopes, embracing among others the saiga, the gazelles, the impala,

and springbuck. All these are small or medium-sized antelopes, with hairy muzzles, generally short tails, and tall, narrow-crowned cheek-teeth, like those of sheep. With the exception of the springbuck and the majority of the gazelles, horns are confined to the males. From all the other members of this assemblage the blackbuck is distinguished by the beautiful spiral formed by its horns. It has large face-glands, a short and compressed tail, and well-developed lateral hoofs. Height at shoulder about 32 inches; average weight, 85 lbs. It is only in adult males that the characteristic dark tint from which the species takes its name is developed; young males being uniformly brownish fawn above like the does.

Distribution.—India, from the foot of the Himalaya to Cape Comorin, and from the Punjab to Lower Assam; unknown in Ceylon and the countries to the eastward of the Bay of Bengal.

Length straight.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ -28 $\frac{3}{4}$	...	...	Jeypore . . .	Major-Gen. Sir B. Blood, K.C.B.
28 $\frac{1}{2}$	5	17 $\frac{3}{4}$	Near Delhi . . .	A. O. Hume, C.B. (See illustration.)
-28	...	20	Do. . . .	Major P. Dunell Pank.
-28	5	15	38 miles north of Ahmedabad	T. Le Mesurier.
-27 $\frac{7}{8}$	...	...	Jeypore . . .	Major-Gen. Sir B. Blood, K.C.B.
-27	5	19 $\frac{1}{2}$	Bikanir . . .	Capt. Harry V. Brooke,
26 $\frac{3}{4}$	4 $\frac{3}{4}$	25 $\frac{1}{4}$	Bhurt pore, N.W.P.	Col. E. T. H. Hutton.
-26 $\frac{3}{4}$	5	19 $\frac{1}{2}$	Bikanir . . .	Capt. Harry V. Brooke.
-26 $\frac{3}{4}$	4 $\frac{3}{4}$	...	Do. . . .	Major-Gen. Alexander A. A. Kinloch.
-26 $\frac{1}{2}$	...	...	N.W.P. . . .	C. B. Oldfield.
26 $\frac{3}{8}$	5	17 $\frac{7}{8}$	Sirsa, Punjab . .	A. O. Hume, C.B.
-26 $\frac{1}{8}$	5 $\frac{1}{2}$	22	Bikanir . . .	Lieut.-Col. G. D. F. Sullivan.
26 $\frac{1}{2}$	5	23 $\frac{1}{8}$	Oudh . . .	E. St. J. Lawson.
26	5	21 $\frac{7}{8}$	Bikanir . . .	Capt. H. W. Codrington.
-26	...	...	Jeypore . . .	Capt. G. L. Holdsworth.
25 $\frac{1}{2}$	...	15	?	Col. Martin.
25 $\frac{1}{2}$	4 $\frac{1}{2}$	18	Punjab . . .	Major R. H. Rattray.
25 $\frac{3}{8}$	5 $\frac{1}{2}$	14 $\frac{1}{2}$	Sirsa, Punjab . .	Hume Collection, British Museum.

¹ Measured and recorded by A. O. Hume, but not now in the possession of General Sir B. Blood, K.C.B.

BLACKBUCK or INDIAN ANTELOPE (*Antelope bezoartica*)—continued.

Length straight.	Circumference.	Tip to Tip.	Locality.	Owner.
-25 $\frac{3}{8}$	5	19	?	Count E. Hoyos.
25 $\frac{1}{4}$	4 $\frac{3}{8}$	19	Jeypore . . .	A. B. Graves.
25 $\frac{5}{8}$	5 $\frac{5}{8}$	15	Kathiawar . . .	Lieut.-Col. L. L. Fenton.
25	4 $\frac{7}{8}$	19	Sirsa, Punjab . . .	Hume Collection, British Museum.
-25	5 $\frac{1}{4}$	13 $\frac{1}{2}$	?	Bombay Natural History Society's Museum.
-25	...	...	?	Lucknow Museum.
24 $\frac{3}{8}$	5	20	Jeypore . . .	Surgeon-Major J. B. Buchanan.
24 $\frac{3}{8}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	Dholpur . . .	A. J. Coppinger.
24 $\frac{1}{2}$	5 $\frac{5}{8}$	20 $\frac{1}{4}$	Bikanir . . .	H.H. Maharaja of Bikanir.
24 $\frac{3}{8}$	4 $\frac{7}{8}$	18 $\frac{1}{4}$	Do. . . .	Lieut.-Col. G. D. F. Sulivan.
24 $\frac{1}{4}$	4 $\frac{3}{8}$	19 $\frac{1}{2}$	?	A. Leslie Renton.
24 $\frac{1}{4}$	5	18 $\frac{1}{2}$	?	Marquis of Ailsa.
-24 $\frac{1}{4}$	4.33	20.85	Udepur . . .	Viscount Edmond de Poncins.
-24 $\frac{1}{4}$	5	19 $\frac{1}{4}$	Punjab . . .	Capt. A. Hicks-Beach.
24	5	18 $\frac{7}{8}$	Aligahr . . .	St. George Littledale.
24	4 $\frac{5}{8}$	16 $\frac{3}{8}$	Rajpura . . .	The late J. E. Ubsdell.
-24	4 $\frac{7}{8}$	...	Punjab . . .	J. Johnston-Stewart.
24	...	20	?	Duke of Bedford.
-24	...	...	?	Otho Shaw.
23 $\frac{3}{8}$	5 $\frac{5}{8}$	21	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
23 $\frac{3}{8}$	4 $\frac{3}{8}$	13 $\frac{1}{4}$	?	Capt. F. C. Quicke.
-23 $\frac{3}{8}$	...	...	Central Provinces . .	Capt. H. M. Biddulph.
23 $\frac{3}{8}$	5	16 $\frac{1}{4}$	Punjab . . .	Major J. W. M. Cotton.
23 $\frac{5}{8}$	4 $\frac{7}{8}$	19 $\frac{1}{4}$	Patiala . . .	Lieut.-Col. E. E. Carr.
23 $\frac{5}{8}$	5 $\frac{5}{8}$	14 $\frac{3}{4}$	?	Hon. Walter Rothschild.
23 $\frac{5}{8}$	4 $\frac{3}{8}$	16 $\frac{5}{8}$	Central Provinces . .	C. D. Twopeny.
¹ 23 $\frac{1}{2}$	3 $\frac{1}{4}$	20 $\frac{1}{4}$	?	A. O. Hume, C.B.
23 $\frac{1}{2}$	5 $\frac{5}{8}$	16 $\frac{3}{4}$	Bikanir . . .	Capt. F. E. S. Adair.
23 $\frac{1}{2}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	Do. . . .	Major H. C. Morland.

¹ Malformed, curving backwards like an ibex.

BLACKBUCK or INDIAN ANTELOPE (*Antelope bezoartica*)—*continued*.

Length straight.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-23½	5	17½	?	James J. Harrison.
23½	5	24½	Bikanir . .	U. O. Thynne.
-23½	5½	18	Gaziabad . .	Major G. Douglas.
23½	5½	18½	Do. . . .	Hume Collection, British Museum.
23½	4½	17½	Sirhind . . .	Col. R. J. Heber-Percy.
23	5½	13½	North India . .	Sir Victor Brooke's Collection.
23	5½	15½	Indore . . .	Col. Cunliffe Martin.
23	5½	15½	?	H. G. Buxton.

Head of Blackbuck.

Skull and Horns of Impala, from a specimen shot by A. H. Neumann.

IMPALA (*Æpyceros melampus*).

Inzero of the Masubias.
Swalah of the Swahilis.

Mpala in the Barotse, Lake Ngami,
and the Chilala and Chibisa.

This beautiful impala, or pala, differs from all the members of the gazelle group by the absence of the lateral hoofs; its specific name (black-footed) being taken from the pair of tufts of black hair on each hind foot. The horns of the bucks, which are of considerable length in proportion to the size of the animal, show a characteristic and graceful double curvature; and the bright foxy red hue of the shining fur of the upper parts aids in the easy identification of the species. Height at shoulder about 33 inches. The Boer name of rooibok (red buck) is happily chosen. Weight about 110 lbs.

Distribution.—Southern and South-Eastern Africa, extending as far north as Lower Kordofan. In Angola replaced by a closely allied form (*Æ. petersi*), usually regarded as a distinct species, but which may be merely a local race; it is distinguished by the presence of a purplish black streak down the middle of the face and another

through each eye. In the days of their abundance impala were to be found in big troops ; and such are still to be met with on the Upper Zambesi, in East Mashonaland, and parts of British East and Central Africa. Half a century ago, or even less, they were to be found in similar numbers among the covert on the banks of every river in the Transvaal and Bechuanaland ; but now it is not till the northern borders of the former country that they are to be met with, and even then only in small parties here and there. Impala are some of the fleetest of all antelopes, and are also in the habit of leaping high in the air ; their presence always implies the neighbourhood of water.

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
30	24	6½	17½	E. C. Africa . .	Lord Delamere.
29	22½	5½	11	Do. . .	Do.
28	23	5¾	22¾	Do. . .	A. H. Neumann. (See illustration.)
...	22½	...	...	Masailand . .	F. J. Jackson, C.B.
28	21	5½	12½	E. Africa . .	G. E. Smith.
27½	21	5½	14½	South Africa . .	The late Dr. Burchell, British Museum.
27	23	6	23½	Between Lakes Baringo and Rudolph	H. Andrew.
27	22½	...	15½	Between Lakes Naivasha and Baringo	F. J. Jackson, C.B.
27	22½	6	10¾	E. Africa . .	Major A. E. Smith.
-27	21½	6	9	Do. . .	E. Gedge.
-26½	20¾	...	...	South Africa . .	Grahamstown Museum.
26½	21	5½	16	Do. . .	Hon. Walter Rothschild.
26½	22¾	5¾	15	Uganda . .	Col. F. D. Lugard, C.B., D.S.O.
26½	19¾	5¾	22½	E. Africa . .	C. W. Hobley.
25½	21½	6½	12¾	Do. . .	G. E. Smith.
...	20½	5¾	15	Do. . .	W. Astor Chanler.
...	20½	5½	11½	Do. . .	H. C. V. Hunter.
-25½	20	6	14	Matamiri Bush .	F. Vaughan Kirby.
25½	20	6	13¾	E. Africa . .	Henry Charrington.
25½	20½	5	12½	Do. . .	F. J. Jackson, C.B.
-25.13	20	5.12	15.7	Do. . .	Prince Henry of Liechtenstein.

IMPALA (*Epyceros melampus*)—continued.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
-25 $\frac{1}{8}$	20 $\frac{1}{4}$	...	10 $\frac{3}{4}$	?	F. J. Newnham.
25	21 $\frac{1}{8}$	5 $\frac{7}{8}$	17 $\frac{5}{8}$	East Africa . .	F. J. Jackson, C.B.
24 $\frac{7}{8}$	19 $\frac{3}{4}$	5 $\frac{7}{8}$	11 $\frac{5}{8}$	Do. . .	Sir Edmund G. Loder, Bart.
24 $\frac{1}{2}$	19 $\frac{5}{8}$	5 $\frac{5}{8}$	12 $\frac{3}{8}$	S. Africa . .	British Museum.
..	20	...	...	Chobe Valley . .	F. C. Selous.
...	20	...	...	E. Africa . .	Sir John Willoughby, Bart.
24	20	5 $\frac{1}{2}$	16	Do. . .	J. Gardiner Muir.
24	20	6	11 $\frac{3}{4}$	Do. . .	E. J. L. Berkeley.
-24	20 $\frac{1}{2}$	5 $\frac{1}{2}$	13 $\frac{1}{2}$	S. Africa . .	Dublin Museum.
-24	19	5 $\frac{1}{2}$	10	Do. . .	Mr. Justice Hopley.
-24	...	6 $\frac{1}{2}$	16 $\frac{1}{4}$	E. Africa . .	T. E. Buckley.
23 $\frac{5}{8}$	19 $\frac{1}{4}$	5 $\frac{3}{8}$	16 $\frac{3}{8}$	Do. . .	Capt. R. A. J. Montgomerie, C.B., R.N.
23 $\frac{5}{8}$	...	5 $\frac{1}{2}$	9 $\frac{3}{8}$	Do. . .	Hon. Walter Rothschild.
-23 $\frac{1}{2}$	19	...	12 $\frac{3}{8}$	Lydenburg . .	F. H. Barber.
23 $\frac{1}{2}$	19	5	8	E. Africa . .	C. F. S. Vandeleur, D.S.O.
23 $\frac{3}{8}$	20 $\frac{3}{8}$	6	14 $\frac{1}{2}$	Do. . .	Sir Robert Harvey, Bart.
23 $\frac{1}{8}$	19 $\frac{3}{8}$	5 $\frac{3}{8}$	12 $\frac{3}{4}$	Ndi, E. Africa . .	C. Steuart Betton.
-23	18 $\frac{1}{4}$	5	10	S. Africa . .	A. Ohlsson.
22 $\frac{3}{4}$	18 $\frac{3}{4}$	6	14 $\frac{3}{4}$	E. Africa . .	Major W. H. Williams.
22 $\frac{1}{2}$	18 $\frac{1}{2}$	5 $\frac{1}{2}$	14 $\frac{3}{8}$	Matabeleland . .	Hon. R. A. Ward.
-22 $\frac{1}{2}$	18	...	...	?	O. R. Dunell.
-22	19	...	...	S. Africa . .	Cape Town Museum.
-...	19	...	...	Njoko River . .	R. T. Coryndon.
22	18	6	10 $\frac{1}{2}$	S. Africa . .	James J. Harrison.
21 $\frac{3}{4}$	18	5	9 $\frac{1}{4}$	Pungwe . .	Hon. T. Thynne.
21 $\frac{1}{2}$	17 $\frac{1}{4}$	5 $\frac{1}{2}$	12 $\frac{3}{4}$	S.E. Africa . .	E. Lort-Phillips.
21 $\frac{1}{4}$	18 $\frac{3}{4}$	5 $\frac{1}{4}$	10	Do. . .	Col. G. A. Percy.
21 $\frac{1}{4}$	17 $\frac{1}{2}$	5 $\frac{1}{4}$	11 $\frac{1}{4}$	Do. . .	G. L. Bonham.
21 $\frac{1}{4}$	17	5	8 $\frac{1}{4}$	Do. . .	Viscount Ennismore.

The following specimens belong to the small form described as *Æ. johnstoni*, now regarded as inseparable from the ordinary impala :—

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circum- ference.			
19½	15½	4½	5½	Choma River, B.C.A.	R. H. Ferrers Stranach.
19	14½	5½	7	B.C.A. . . .	John Yule.
17½	14½	4½	9½	Do. . . .	C. C. Bowring.
17	14½	5½	8	Do. . . .	Hon. Walter Rothschild.

ANGOLAN IMPALA (*Æpyceros petersi*).

See page 206.

23½	18½	6	12½	Kaokoland . .	Capt. F. Cookson.
21	17½	5½	11½	Angola . . .	Hon. Walter Rothschild.
21	17½	6	9½	?	Count E. Hoyos.

|

Horns of Saiga, from the Hon. Walter Rothschild's specimen.

SAIGA (*Saiga tatarica*).

One of the most remarkable of all antelopes is the Central Asian saiga, which, although belonging to the same group as the blackbuck, differs from most of its kindred by the extraordinary inflated and puffy shape of the nose. This forms a kind of trunk, comparable to that of the dik-diks, with the nostrils directed downwards. The tail is short, and lateral hoofs, which are wanting in the impala, are present. In summer the colour is dull yellowish above and whitish beneath, but in winter the whole fur is uniformly whitish. The short and blunt ears are very thickly covered with hair, and the horns of the males pale amber colour. Height at shoulder about 30 inches.

Distribution.—The open steppes of Southern Russia and South-Eastern Siberia. Formerly the range of this animal was much more extensive in Europe, reaching to the confines of Poland, but nowadays it is restricted to the Kalmuk Steppes between the rivers Don and Volga.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
14 $\frac{3}{8}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	Siberia	Hon. Walter Rothschild. (See illustration.)
13 $\frac{3}{4}$	5	..	Volga	Sir Edmund G. Loder, Bart.
13 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
13 $\frac{5}{8}$	5	5 $\frac{1}{2}$	Sarepta, South Russia . . .	British Museum.
13 $\frac{1}{2}$	5 $\frac{3}{8}$	4 $\frac{3}{8}$	Russia	Hon. Walter Rothschild.

SAIGA (*Saiga tatarica*)—*continued.*

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner
12 $\frac{7}{8}$	5 $\frac{3}{8}$	single horn	Russia	British Museum.
12 $\frac{7}{8}$	4 $\frac{5}{8}$	5 $\frac{3}{8}$	Sarepta, South Russia	Do.
12 $\frac{1}{2}$	5	4 $\frac{1}{4}$	Siberia	Dublin Museum.
11	4 $\frac{7}{8}$	4 $\frac{1}{2}$	Do.	British Museum.

Head of Male Saiga.

Head of Chiru, from H. Z. Darrah's specimen.

CHIRU or TIBETAN ANTELOPE (*Pantholops hodgsoni*).

Among several animals peculiar to the Tibetan plateau none is more interesting than the so-called chiru, whose beautiful horns form some of the most cherished trophies of the sportsman. Although very unlike in general appearance, the chiru is evidently a near ally of the saiga, having the nose even more swollen at the sides, at least in the male, but less bent downwards at the tip. The long black horns, which are somewhat compressed, rise almost vertically from the head, and are slightly divergent, nearly straight below, but evenly curving forwards above, and ridged in front. General colour of fur, which is very dense and short, pale fawn above, with a pinkish suffusion, but the face of the male black. Height at shoulder about 31 or 32 inches; weight from 90 to 120 lbs.

Distribution.—The plateau of Tibet, at elevations of from 13,000 to

16,000 feet, or even more ; the animal associates in pairs or small parties.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27 $\frac{1}{2}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	From the Darma Side across the Beansi Pass	A. O. Hume, C.B.
27 $\frac{1}{8}$	5 $\frac{1}{2}$	11 $\frac{1}{4}$	Tibet	Sir Robert Harvey, Bart.
27 $\frac{1}{8}$	5 $\frac{7}{8}$	15 $\frac{1}{8}$	Hills N. of the Beansi Pass	A. O. Hume, C.B.
-27	...	12	?	J. D. Inverarity.
-26 $\frac{1}{2}$	...	...	Chang Chenmo . .	Major A. E. Ward.
26 $\frac{3}{8}$	5 $\frac{7}{8}$	13 $\frac{3}{8}$	Ladak	Hon. Charles Ellis.
26	4 $\frac{7}{8}$	12 $\frac{7}{8}$	Tibet	Captain G. Campbell.
25 $\frac{3}{8}$	5 $\frac{1}{2}$	12 $\frac{3}{4}$	?	Arnold Pike.
25 $\frac{1}{2}$	5 $\frac{3}{4}$	11 $\frac{1}{2}$	Tibet	Captain C. B. Vandeleur.
25 $\frac{3}{8}$	5 $\frac{1}{8}$	12 $\frac{1}{2}$	Hills north of Leh .	Hume Collection, British Museum.
25 $\frac{1}{4}$	5 $\frac{3}{8}$	12 $\frac{1}{4}$	Hills north of Kumaon	Do.
25	5 $\frac{3}{8}$	11 $\frac{1}{2}$	Chang Chenmo . .	H. Z. Darrah. (See illustration.)
-25 $\frac{1}{4}$	5	10 $\frac{3}{4}$	Tibet	P. H. G. Powell Cotton.
24 $\frac{3}{4}$	5 $\frac{3}{8}$	11 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
24 $\frac{3}{4}$	5	11	?	E. L. Phelps.
24 $\frac{3}{8}$	5 $\frac{3}{8}$	11 $\frac{3}{4}$	Tibet	Sir Robert Harvey, Bart.
-24 $\frac{1}{2}$	4 $\frac{3}{4}$	...	Do.	Major-General Alexander A. A. Kinloch.
24 $\frac{3}{8}$	5 $\frac{1}{4}$	16 $\frac{1}{2}$	?	British Museum.
-24	...	...	Changchingris . .	Otho Shaw.
-24	5 $\frac{1}{2}$	12	?	T. E. Buckley.
-24	...	...	Chang Chenmo . .	Captain H. Trevor.
-24	...	...	?	Indian Museum.
-24	...	...	?	H.H. the Maharaja of Travancore, G.C.S.I.
-24	5 $\frac{1}{4}$	12 $\frac{1}{2}$	Tibet	Captain C. B. Vandeleur.
-23 $\frac{3}{8}$	5 $\frac{1}{4}$	11 $\frac{3}{8}$	Do.	H. C. V. Hunter.
-23 $\frac{3}{8}$	5 $\frac{3}{8}$	13 $\frac{3}{8}$	Chang Chenmo . .	Paris Museum.
-23 $\frac{1}{2}$	5 $\frac{1}{2}$	8 $\frac{1}{4}$	Do.	P. Church.
23 $\frac{1}{2}$	5	15 $\frac{1}{4}$	Do.	Major H. C. Morland.
23 $\frac{1}{2}$	5	14 $\frac{3}{4}$	Do.	Reginald Beech.
23 $\frac{1}{2}$	5 $\frac{1}{4}$	12 $\frac{7}{8}$	Do.	Captain H. Trevor.
23 $\frac{3}{8}$	5 $\frac{1}{4}$	11 $\frac{3}{8}$	Ladak	Major C. S. Cumberland.
23 $\frac{1}{4}$	5 $\frac{3}{8}$	14 $\frac{3}{8}$	Do.	Hon. Walter Rothschild.
23 $\frac{1}{4}$	5 $\frac{3}{8}$	13 $\frac{3}{4}$	Do.	Captain H. M. Biddulph.
23 $\frac{1}{4}$	...	11 $\frac{1}{4}$	Do.	Colonel R. J. Heber-Percy.
23 $\frac{1}{4}$	5	8 $\frac{1}{4}$	Do.	G. B. Milne.
23 $\frac{3}{8}$	5 $\frac{1}{2}$	...	Do.	Dr. W. P. Y. Bainbrigge.
23	4 $\frac{3}{8}$	11 $\frac{3}{4}$	Do.	Captain H. Trevor.
23	5	15	Do.	H.R.H. le Duc d'Orléans.

Head of Springbuck, from F. H. Barber's specimen.

SPRINGBUCK (*Antidorcas onchore*).

Although nearly allied to the gazelles, both in bodily form, coloration, and the shape of the horns, the springbuck presents a peculiarity entitling it to be regarded as the representative of a genus by itself. This peculiarity is the presence of a fold, or narrow pouch, running down the middle of the hinder part of the back, and lined with long pure white hairs. In periods of excitement this pouch is capable of being turned partially inside out, when the long white hairs are erected, and give a totally different appearance to this region of the animal. Owing to the dark nose-streak stopping short at the level of the eyes, the springbuck has more white on the face than is the case with the majority of gazelles; and the white on the rump, which includes the tail and joins that of the middle of the back, also occupies a larger area. Height at shoulder, 30 inches.

Distribution.—The plains of Southern Africa, extending in the central districts of the continent to about latitude 20° S., where its limits are defined by the forests to the south of the Mabebe River; in the west ranging as far north as Mossamedes and Benguela in Southern Angola, and in the east at least up to the Limpopo. Although now never found in the countless thousands which formerly swarmed over the plains of the Transvaal and Bechuanaland, springbuck are still

abundant in many districts. Protected to a certain degree by law, they are to be met with in parts of Cape Colony and the Orange Free State; while on the plains bordering the Botletli and the neighbouring salt-pans, as well as in Great Namaqualand, Damara-land, and the Ovampo Flats, they occur in large numbers. Spring-buck-stalking on the open veldt affords excellent rifle practice; zest being added to the sport from the fact that the venison is most excellent for the table.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ 19	5	20½	Kalahari . . .	The late W. F. Webb.
-17	...	...	Middleburg Flats . .	F. H. Barber. (See illustration.)
-16½	...	...	Bechuanaland . .	Vryburg Club.
15½	6½	7½	?	Hon. T. Thynne.
-15½	6½	...	?	Dr. Maloney.
15½	6½	3½	Cape Colony . . .	C. D. Rudd.
-15½	6	2½	S. of Great Namaqualand	Th. Rehbock.
-15½	5½	4½	?	Dr. W. P. Y. Bainbrigge.
15½	6½	5½	Ovampo Flats . .	Capt. F. Cookson.
15½	5½	10½	?	The late W. C. Oswell.
15	5½	8½	?	Capt. E. J. Lugard.
-15	6	6½	?	A. Ohlsson.
-15	...	...	Langberg, Kimberley .	Cape Town Museum.
-14½	...	...	?	Alfred Ebdon.
14½	7	2½	South Africa . . .	A. W. Davis.
14½	6½	5	Do. . . .	C. Ansell.
14	5½	4½	?	British Museum.
14	5½	5	?	F. E. Potter.
13½	6	5½	Griqualand . . .	F. C. Selous.
13½	5½	5½	Benguela . . .	G. W. Penrice.
13½	5½	7½	?	Sir Victor Brooke's Collection.
13½	5½	5	Botletli River, Ngamiland	H. A. Bryden.
13½	5½	3½	?	Sir Edmund G. Loder, Bart.

¹ A malformed specimen.

SPRINGBUCK (*Antidorcas euchore*)—*continued.*

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-13½	...	...	?	O. R. Dunell.
13½	5½	4½	South Africa . . .	F. C. Selous.
13½	8½	4½	Do. . . .	R. A. Cooper.
13½	6	4	Do. . . .	Hon. John Ward.
♀ 13	...	...	Middleburg Flats . . .	F. H. Barber.
-♀ 13	...	...	South Africa . . .	Alfred Ebdon.
13	5½	6	Britstown, South Africa .	W. S. Curtis.
12½	5½	3½	Cape Colony . . .	Rowland Ward.
12½	5½	7½	Orange Free State . . .	Julius Jeppe.
-12½	5	4	Do. . . .	Do.
12½	5½	4½	South Africa . . .	P. H. Illingworth.
-12½	4½	7½	Transvaal . . .	Dr. Percy Rendall.
-12½	5½	4½	Orange Free State . . .	Count E. Hoyos.
♀ 12½	2½	...	S. of Great Namaqualand	Th. Rehbock.
-♀ 12	...	...	Damaraland . . .	F. H. Barber.
-12	...	...	?	C. T. Jones.
-♀ 11½	3	3	?	Dr. W. P. Y. Bainbrigge.
♀ 10½	3½	5½	South Africa . . .	F. C. Selous.
♀ 10½	3½	2½	Ovampoland . . .	Capt. F. Cookson.
♀ 9½	3½	4½	Benguela . . .	G. W. Penrice.
8½	2½	4	Natal . . .	British Museum.
-♀ 8½	2½	3½	Transvaal . . .	Dr. Percy Rendall.
♀ 8	3½	2½	South Africa . . .	A. Beit.
♀ 7½	2½	2½	Do. . . .	F. C. Selous.

GOA or TIBETAN GAZELLE (*Gazella picticaudata*).

The true gazelles, from which the springbuck is now separated as a genus by itself (*Antidorcas*), form a very extensive group of delicately built antelopes of easy definition. They are of medium or rather small size, with the muzzle of ordinary shape, the neck not unduly elongated, and no fold containing a crest of long erectile hairs down the middle of the back. To suit the nature of their haunts, their coloration is generally of a sandy hue, with the under parts white, and the face in most cases marked with parallel dark and light longitudinal streaks; dark bands being also frequently present on the rump and on the flanks to separate the tawny of the back from the white beneath. The knees are very generally furnished with brush-like tufts of long, stiff hairs; and the tail is either short or of medium length. With the exception of four species, horns are present in both sexes; those of the males being stout, distinctly ridged, and generally of about the same length as the head, although occasionally much longer. Except at the tips, they curve backwards, so as to present an anteriorly convex lower portion, above which they are generally more or less curved forwards and upwards. Gazelles have a wider geographical distribution than any other genus of antelopes, and are, for the most part, inhabitants of more or less desert regions, or their confines.

The Tibetan goa belongs to a small and aberrant group of the genus in which the tail is very short, the usual dark and light streaks on the face are wanting, and the females are hornless. As a species, it

is distinguished by its comparatively small size, and the strongly marked backward curvature of the horns, which are not hooked at the tips. Height at shoulder about 25 inches. Weight about 45 lbs.

Distribution.—The plateau of Tibet and some of the adjacent parts of Central Asia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14½	3½	2	Hanle, Spiti . .	Hon. Walter Rothschild.
-13½	...	...	?	Lient.-Col. T. Greenaway.
13½	3½	5½	Hills N. of Sikim .	Hume Collection, British Museum.
-13½	4	...	Tibet . . .	Major-General Alexander A. A. Kinloch.
-13½	3½	3	Ladak . . .	Capt. H. W. Codrington.
-13½	4	2½	Do. . . .	Do.
13½	4	3½	Tibet . . .	H. C. V. Hunter.
-13½	3½	6½	S.E. of Hanle .	P. H. G. Powell-Cotton.
-13	3½	5½	Tibet . . .	Bombay Natural History Society's Museum.
13	4½	4½	East Ladak . .	Col. J. Biddulph.
13	3½	1½	?	Captain C. B. Vandeleur.
13	...	...	?	Indian Museum.
13	3½	5½	N. Sikim . . .	Surgeon-Captain A. Pearse.
12½	3½	4½	Hills N. of Kumaon	A. O. Hume, C.B.
12½	3½	4½	?	The late B. H. Hodgson, British Museum.
12½	3½	2½	Hills N. of Kumaon	Hume Collection, British Museum.
12½	4½	5½	Near Hanle . .	H. Z. Darrah.
12½	3½	7	?	Arnold Pike.
12½	3½	5½	South of Hanle .	Col. F. C. Lister-Kay.
12½	3½	6½	Ladak . . .	David T. Hanbury.
-12½	3½	31½	Tibet . . .	Prince Henri d'Orléans, Paris Museum.
-12½	3½	6½	Do. . . .	Sir Edmund G. Loder, Bart.
12½	3½	5	Ladak . . .	Capt. F. E. S. Adair.
-12	3½	5	Tibet . . .	Capt. H. M. Biddulph.
12	3½	2½	Do. . . .	H. C. V. Hunter.
12	4	5½	Do. . . .	Rowland Ward.
11½	3½	3½	?	R. Johnstone.
11½	3½	5½	Tibet . . .	The late B. H. Hodgson, British Museum.
11½	3½	4½	Do. . . .	Hon. Walter Rothschild.
11½	3½	4½	Hanle . . .	F. W. H. Walshe.
11½	3½	4½	?	J. V. Phelps.
11	3½	3½	Ladak . . .	R. Lydekker, British Museum.

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Skull and Horns of Przewalski's Gazelle, from a specimen shot by Prince Demidoff.

PRZEWALSKI'S GAZELLE (*Gazella przewalskii*).

Nearly allied to the goa, from which it differs by its rather larger size, and the distinct hooks formed by the tips of the horns of the bucks. General colour in summer, deep fawn; in winter, pale finely grizzled fawn; white of buttocks running up in an angle on each side of the tail, which is very sharp, and almost concealed by the fur. Front of limbs more or less brown; no tufts of hair on the knees.

Distribution.—Mongolia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11	4 $\frac{3}{8}$	4 $\frac{3}{8}$	Altai . . .	St. George Littledale.
10 $\frac{1}{2}$	4 $\frac{3}{8}$	2 $\frac{3}{4}$	?	British Museum.
10	4	4 $\frac{3}{8}$	?	Henri de Bourbon, Comte de Bardi.
10	4 $\frac{1}{8}$	6	Altai . . .	Prince Demidoff.
9 $\frac{3}{4}$	4 $\frac{1}{8}$	4 $\frac{3}{8}$	North of Pekin .	The late R. Swinhoe, British Museum.
8 $\frac{1}{2}$	3 $\frac{3}{8}$	4 $\frac{3}{8}$	North China . .	Père A. David, Paris Museum.



Skulls and Horns of Mongolian (1, 3, 5) and Persian (2, 4) Gazelle. From specimens in the Collection of A. O. Hume.

MONGOLIAN GAZELLE (*Gazella gutturosa*).

Jaeisw or *Sava-keek* in Turkestan. *Hwang-yang* in Mongolia.

Belonging to the same group of the genus as the goa, this larger species takes its scientific title from the peculiar swollen condition of the throat of the male during the pairing season. In addition to its size (height at shoulder about 30 inches), the species is characterised by the comparatively slight backward curvature of the horns, which are not hooked at the tips; the general colour being pale fawn, with the rump, flanks, and the whole of the limbs white.

Distribution.—Northern and Eastern Mongolia and the southern borders of Russian Transbaikalia. This gazelle was discovered by the Russian traveller Pallas, who described it as long ago as the year 1777.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15 $\frac{3}{4}$	5	6.34	Lob Nor . . .	A. O. Hume, C.B.
14 $\frac{3}{4}$	4 $\frac{7}{8}$	3	Chinese Turkestan .	Major C. S. Cumberland.
-14 $\frac{5}{8}$	3 $\frac{3}{8}$	4 $\frac{3}{4}$	Lob Nor . . .	Prince Henri d'Orléans, Paris Museum.
14 $\frac{1}{2}$	4 $\frac{1}{2}$	3	Wana Plain, Wazir- istan	A. J. Grant.
13 $\frac{3}{4}$	4 $\frac{7}{8}$	4 $\frac{1}{2}$	Chinese Turkestan .	E. L. Phelps.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	6	Saissan, West Siberia .	Dr. O. Finsch, British Museum.
13 $\frac{3}{8}$	4 $\frac{3}{8}$	5 $\frac{1}{2}$	?	Hume Collection, British Museum.
-13 $\frac{1}{4}$	3 $\frac{3}{4}$	3 $\frac{1}{8}$	?	Capt. P. J. Gordon.
13 $\frac{5}{8}$	4 $\frac{5}{8}$	6 $\frac{1}{4}$	Mongolia . . .	Sir Edmund G. Loder, Bart.
11 $\frac{1}{2}$	4 $\frac{7}{8}$	3	Chinese Turkestan .	Reginald Beech.

PERSIAN GAZELLE (*Gazella subgutturosa*).

A near relation of the Mongolian species, but distinguished by the longer tail, of which the upper surface is crested with black, and the presence of dark and light markings on the face. These face-markings differ, however, from those of all other species save the Marica gazelle (*G. marica*) of Arabia, in that the upper portion of the face, at least in aged individuals, is pure white, so that the central dark band is interrupted on the forehead. From the Marica the Persian gazelle may be distinguished by its superior size (height at shoulder from 26 to 27 inches), and the absence of horns in the female. The larynx is swollen, forming a peculiar prominence on the front of the upper part of the throat.

There are two distinct local races of this gazelle, the ordinary Caspian and Persian *G. subgutturosa typica*, and the Yarkand *G. subgutturosa yarcandensis*; the latter being distinguished by its superior dimensions and darker face-markings, as well as by the much smaller degree of divergence of the horns of the males, which are also relatively shorter.

Distribution.—Western Asia from Asia Minor and Caucasia in the west to Turkestan, Yarkand, and Mongolia in the east.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14½	5½	6	Near Tiflis . . .	Clive Phillippo-Wolley.
13½	4½	4	Khelat . . .	A. O. Hume, C.B.
12½	4	5½	Syria . . .	Hon. Walter Rothschild.
12	4	5	Asia Minor . . .	Do.
12	4	2¾	Khelat . . .	A. O. Hume C.B.

The undermentioned belong to the Yarkand race.

16	5	3½	Yarkand . . .	A. O. Hume, C.B.
15½	5	3½	Do. . .	Do.
15½	...	5	Maralbashi . . .	H. Lennard.
14	4¾	5.75	Yarkand . . .	A. O. Hume, C.B.
14	5	5¾	Eastern Turkestan . .	Col. J. Biddulph.
13½	4¾	6½	Maralbashi . . .	David T. Hanbury.

PERSIAN GAZELLE (*Gazella subgutturosa*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-13 $\frac{3}{4}$	5 $\frac{2}{8}$	7 $\frac{1}{8}$	Altai . . .	Prince Henri d'Orléans, Paris Museum.
13	4 $\frac{1}{8}$	7 $\frac{1}{8}$	Maralbashi .	P. Church.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{3}{8}$	Altai . . .	St. George Littledale.
-12		2	Maralbashi	H. Lennard.

Head of Springbuck.

Head of Dorcas Gazelle.

DORCAS GAZELLE (*Gazella dorcas*).

This well-known species brings us to the more typical group of gazelles, in the members of which the central dark face-band is continued uninterruptedly up the forehead, and horns are developed in both sexes. Among the special characteristics of the present species may be noted the circumstance that the white area of the rump does not invade the fawn of the back, the indistinctness of the dark lateral band dividing the fawn of the upper parts from the white beneath, and the perfectly lyrate form of the horns, which are of medium length, with the middle portion twisted outwardly, and the tips converging towards one another. Height at shoulder, 21 to 22 inches; total length about 42 inches. General colour pale fawn, of rather variable tint, with the face-markings distinct.

Distribution.—Morocco, Algeria, and thence eastwards through Egypt into Palestine and Syria. By the Arabs of Algeria this gazelle is known as rhozal or hemar.

DORCAS GAZELLE (*Gazella dorcas*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{8}$	4 $\frac{1}{2}$	2 $\frac{1}{2}$	Algeria	Sir Edmund G. Loder, Bart.
-12 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{8}$	Do.	Viscount Edmond de Poncins.
12 $\frac{1}{2}$	3 $\frac{5}{8}$	3 $\frac{3}{4}$	Southern Sahara . . .	J. J. S. Whitaker.
12 $\frac{3}{8}$	3 $\frac{3}{4}$	2 $\frac{3}{4}$	Algeria	Sir Edmund G. Loder, Bart.
12 $\frac{3}{8}$	3 $\frac{5}{8}$	...	Do.	British Museum.
12 $\frac{1}{2}$	4	2 $\frac{1}{2}$	Do.	Rowland Ward.
-12 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Do.	A. E. Pease.
12	4	3 $\frac{3}{4}$	Do.	J. H. Thomas.
11 $\frac{7}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	Do.	Sir Victor Brooke's Collection.
-11 $\frac{3}{4}$	3 $\frac{3}{4}$	5 $\frac{1}{8}$	Do.	Julius Jeppe.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{7}{8}$	Do.	E. N. Buxton.
-11 $\frac{1}{2}$	3 $\frac{5}{8}$	3 $\frac{1}{8}$	Do.	W. E. Pease.
-10 $\frac{7}{8}$	4	4 $\frac{1}{2}$	Do.	Count E. Hoyos.
10 $\frac{1}{8}$	4	2 $\frac{1}{2}$	Shores of Red Sea . . .	British Museum.
10 $\frac{1}{8}$	3 $\frac{5}{8}$	2 $\frac{3}{4}$	Nubia	Sir Victor Brooke's Collection.
-9 9 $\frac{7}{8}$	...	...	Algeria	A. E. Pease.
-9 $\frac{3}{4}$	4	3 $\frac{3}{4}$	Do.	Dr. Percy Rendall.
-9 9 $\frac{1}{4}$	1 $\frac{3}{4}$	5 $\frac{1}{2}$	Do.	A. E. Pease.
-8 $\frac{3}{4}$	4	3 $\frac{1}{2}$	Do.	Count Scheibler.
-9 6	...	...	Do.	Viscount Edmond de Poncins.

EDMI or ATLAS GAZELLE (*Gazella cuvieri*).

From the dorcas the present species may be readily distinguished by its superior size, the imperfectly lyrate form of the horns, which diverge more or less regularly upwards, the presence of a black spot on the tip of the muzzle, and the rough character of the hair. General colour dull fawn, with a very indistinct lateral band, well-defined face-markings, the lower portion of the tail crested with black, and the under parts, buttocks, and inner surfaces of fore-legs pure white. Height at shoulder from 26 to 27 inches.

Distribution.—The mountains of Morocco, Algeria, and Tunisia, where it is known by the name of edmi or admi.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{7}{8}$	5	3 $\frac{5}{8}$	Algeria	Sir Edmund G. Loder, Bart.
-14 $\frac{1}{2}$	3 $\frac{7}{8}$	3 $\frac{1}{2}$	Do.	A. E. Pease.
14 $\frac{1}{2}$	3 $\frac{3}{4}$	5 $\frac{1}{2}$	Southern Sahara . . .	J. J. S. Whitaker.
-14 $\frac{1}{8}$	...	...	Algeria	A. E. Pease.
♀ 13 $\frac{7}{8}$	3 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	E. N. Buxton.
-13 $\frac{5}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Viscount Edmond de Poncins.
-13 $\frac{1}{2}$	4	$\frac{1}{2}$	Do.	A. E. Pease.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{5}{8}$	Do.	E. N. Buxton.
12 $\frac{3}{8}$	3 $\frac{3}{4}$	5 $\frac{1}{2}$	Do.	Rowland Ward.
12 $\frac{3}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Hon. R. A. Ward.
♀ 11	2 $\frac{1}{2}$	5 $\frac{7}{8}$	Do.	J. J. S. Whitaker.
-♀ 9 $\frac{1}{2}$	2 $\frac{3}{4}$	4	Do.	A. E. Pease.
♀ 8	2 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Capt. G. J. Cuthbert.

ARABIAN GAZELLE (*Gazella arabica*).

Belonging to the same sub-group of the genus as the edmi, this elegant gazelle may be differentiated from that species by its smaller size, smoother hair, and darker coloration, the general tint of the upper parts being dark smoky fawn, with the central face-band rufous fawn, and a black spot on the tip of the muzzle. Height at shoulder, 24 or 25 inches.

Distribution.—Western Arabia, where it is known as ghasal, its Syrian title being ariel or aiel. In spite of its being one of the commonest of the gazelles, and also one which can easily be obtained in captivity, very little authentic information is forthcoming as to its habits, and even its range is not yet fully determined.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
8½	4	2	Mocha, South Arabia	W. T. Blanford, British Museum.
♀ 7½	2	4½	?	Dr. Percy Rendall.
4½	3½	3½	South Arabia	Sir Victor Brooke's Collection.
♀ 4½	1½	2½	?	Major H. G. C. Swayne.

Head of Indian Gazelle, from a specimen shot by Loftus M. le Champion.

INDIAN GAZELLE (*Gazella bennetti*).

Closely allied to the Arabian species, this gazelle (the chikara of the natives and the ravine-deer of many Anglo-Indian sportsmen) is of smaller dimensions and much lighter colour; the height at the shoulder varying from 23 to 24 inches, and the general colour of the upper parts being dull fawn.

Distribution.—Peninsular India, thence extending westward through Baluchistan to the shores of the Persian Gulf. In the *Book of Antelopes* Messrs. Sclater and Thomas remark that, like the lion and the hunting-leopard, this gazelle belongs to an African type, and appears to have been originally a migrant from the west into India, whence it has spread over the greater part of the peninsula. It should, however, be remembered that extinct gazelles and hunting-leopards occur in the north of India.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-15	5	...	Rajputana . . .	H.H. Maharaj Rana Bahadur of Jhalawar.
14½	4½	8½	?	L. M. le Champion. (See illustration.)
-14½	...	...	Ferozepore District .	Captain Harry V. Brooke.

INDIAN GAZELLE (*Gazella bennetti*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-14 $\frac{1}{8}$	...	...	Sirsa District, Punjab	Captain H. Trevor.
14	4 $\frac{3}{8}$	5 $\frac{3}{8}$	Ferozepore District	Captain Harry V. Brooke.
-14	...	...	Near Lahore	Major-General Alexander A. A. Kinloch (measured by).
-13 $\frac{7}{8}$	4 $\frac{1}{2}$	6 $\frac{1}{2}$	Do.	C. P. Down.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	7	?	Sir Victor Brooke's Collection.
13 $\frac{3}{4}$	4 $\frac{3}{8}$	8 $\frac{1}{2}$	Sind	L. Napier.
13 $\frac{3}{8}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	Bikanir	C. F. Vander-Byl.
13 $\frac{1}{4}$	4	4 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
13 $\frac{1}{4}$	4	6 $\frac{1}{4}$	?	Major O. A. Chambers.
-13 $\frac{1}{4}$	4 $\frac{1}{2}$	...	Delhi	Major-General Alexander A. A. Kinloch.
-13 $\frac{1}{8}$	4 $\frac{1}{2}$	4	Hissar	Captain P. J. Gordon.
13	3 $\frac{1}{2}$	6	Bikanir	Major H. C. Morland.
-13	3 $\frac{1}{8}$	3 $\frac{1}{8}$	Gwalior	Viscount Edmond de Poncins.
-13	4 $\frac{1}{2}$	5	?	Major Colvin Stewart.
13	3 $\frac{3}{4}$	6	?	Major R. H. Rattray.
12 $\frac{3}{4}$	4 $\frac{1}{2}$	5	Goorgaon, Punjab	A. O. Hume, C.B.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	?	H. C. V. Hunter.
12 $\frac{3}{4}$	4 $\frac{1}{2}$	5 $\frac{7}{8}$	North Punjab	Colonel J. Biddulph.
12 $\frac{3}{4}$	4 $\frac{1}{2}$	7	?	Captain L. I. B. Hulke.
-12 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{3}{4}$	Bikanir	Captain H. W. Codrington.
-12 $\frac{3}{4}$	4	6	Jodhpore	H.H. Maharaja of Bikanir.
12 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Bikanir	Lieut.-Col. G. D. F. Sullivan.
-12 $\frac{1}{2}$	...	...	?	H.H. the Maharaja of Travancore, C.C.S.I.
12 $\frac{3}{8}$	4	5 $\frac{1}{2}$	Simrol, Bengal	Colonel John Evans, British Museum.
12 $\frac{3}{8}$	4 $\frac{7}{8}$	5 $\frac{3}{8}$	Bikanir	Lieut.-Col. G. D. F. Sullivan.
12 $\frac{3}{8}$	4 $\frac{3}{8}$	6	Do.	P. B. Vander-Byl.
-12 $\frac{3}{8}$	4 $\frac{3}{8}$	6 $\frac{3}{8}$	Kythal, Punjab	Captain M. M'Neill.
12 $\frac{1}{4}$	4 $\frac{3}{8}$	5 $\frac{1}{4}$	Dholpur	A. J. Copping.
-12 $\frac{1}{4}$	4	7	Bikanir	Captain C. B. Vandeleur.
12	4	7 $\frac{1}{2}$	Punjab	Captain A. Hicks-Beach.

INDIAN GAZELLE (*Gazella bennetti*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-12	...	...	Kathiawar . . .	Lieut.-Col. L. L. Fenton.
12	...	...	Banda District . . .	Indian Museum.
12	4½	...	Meerut, N.W. Provinces	C. Hastings-Wood.
12	3½	6	Khandesh . . .	A. Cumine.
-12	4½	6½	Deccan . . .	Vety.-Capt. G. H. Evans.
-12	3½	7½	Bikanir . . .	H.H. Maharaja of Bikanir.
11½	4	4½	?	Do.
11½	4	4½	?	Sir Robert Harvey, Bart.
11½	4½	5½	Bikanir . . .	Captain F. E. S. Adair.
11½	3½	4½	?	Captain N. C. Taylor.
11½	4½	5	Nagaon, Central Provinces	Colonel R. J. Heber-Percy.
11½	4½	5½	Etawah . . .	Hume Collection, British Museum.
11½	4½	5	Jodhpore . . .	Captain G. J. Fitzgerald.
11	4	5½	Bikanir . . .	Captain C. F. Pinney.
11	3½	6	Berar . . .	C. H. Seely.
♀ 7½	½	2½	?	Sir Victor Brooke's Collection.
-♀ 5½	...	...	Banda District . . .	Indian Museum.

Head of Female Speke's Gazelle.

SPEKE'S GAZELLE (*Gazella spekei*).

Dhero of the Somalis.

From the edmi and its allies, with which it agrees in its leading characteristics, this very peculiar gazelle is readily distinguished by the development of a flabby corrugated elevation on the skin of the nose; the general colour of the upper parts being pale brownish fawn, with the lateral band darker than in the other members of the sub-group. Height at shoulder from 23 to 24 inches.

The protuberance on the nose is probably connected with the sexual function; in dead specimens it exhibits a slight cavity beneath the skin which can be inflated by blowing air into the nostrils, and it is therefore probably capable of distension during life.

Distribution.—The plateau in the interior of Somaliland.

SPEKE'S GAZELLE (*Gazella spekei*)—*continued.*

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-12	3 $\frac{3}{4}$	5 $\frac{1}{4}$	Somaliland . . .	Viscount Edmond de Poncins.
-12	...	...	Northern Somaliland . .	J. Menges.
11 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{5}{8}$	The Haud . . .	Major H. G. C. Swayne.
11 $\frac{5}{8}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	Do. . . .	Col. A. Paget.
11 $\frac{1}{2}$	4 $\frac{3}{8}$	2 $\frac{3}{4}$	Somaliland . . .	T. W. H. Clarke.
11 $\frac{1}{4}$	3 $\frac{7}{8}$	4 $\frac{5}{8}$	Do. . . .	Viscount Edmond de Poncins.
11 $\frac{1}{4}$	4	4	Do. . . .	W. H. Cobb.
11 $\frac{1}{8}$	4	5 $\frac{1}{4}$	Do. . . .	C. Liddell.
11	4	4	Do. . . .	A. H. Straker.
11	3 $\frac{7}{8}$	5	Do. . . .	Major H. C. Morland.
11	4 $\frac{1}{8}$	3 $\frac{5}{8}$	Do. . . .	Lord Delamere.
10 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{3}{4}$	Do. . . .	Sir Edmund G. Loder, Bart.
10 $\frac{3}{4}$	4 $\frac{5}{8}$	5 $\frac{1}{4}$	Do. . . .	B. R. M. Glossop.
10 $\frac{3}{4}$	4	4	Do. . . .	R. M'D. Hawker.
10 $\frac{3}{4}$	3 $\frac{7}{8}$	3	Do. . . .	C. N. Welsh.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Do. . . .	E. Lort-Phillips.
10 $\frac{3}{4}$	4	3 $\frac{3}{4}$	Do. . . .	B. Vincent.
10 $\frac{5}{8}$	3 $\frac{1}{8}$	4 $\frac{1}{4}$	Do. . . .	Capt. G. F. T. Leather.
-10 $\frac{1}{2}$	4 $\frac{5}{8}$	3 $\frac{1}{2}$	Do. . . .	Count Scheibler.
10 $\frac{1}{2}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	Do. . . .	The late W. Babington.
-10 $\frac{1}{2}$	4 $\frac{5}{8}$	3 $\frac{3}{4}$	Do. . . .	J. Brander Dunbar.
10 $\frac{1}{2}$	3 $\frac{3}{4}$	4	Do. . . .	Capt. G. Campbell.
-10 $\frac{3}{8}$	3 $\frac{7}{8}$	4 $\frac{1}{2}$	Do. . . .	Count E. Hoyos.
10 $\frac{3}{8}$	3 $\frac{7}{8}$	4 $\frac{1}{8}$	Do. . . .	Sir H. D. Tichborne, Bart.
-10 $\frac{3}{8}$	3 $\frac{5}{8}$	3 $\frac{3}{4}$	Do. . . .	P. H. G. Powell Cotton.
10 $\frac{1}{4}$	4	4 $\frac{1}{4}$	Do. . . .	F. G. Gunnis.
10 $\frac{1}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Do. . . .	P. B. Vander-Byl.
10 $\frac{1}{4}$	3 $\frac{7}{8}$	4	Do. . . .	H.R.H. le Duc d'Orléans.
-10 $\frac{1}{4}$	...	...	Do. . . .	C. V. A. Peel.
-10 $\frac{1}{4}$	4	4 $\frac{1}{4}$	Do. . . .	J. Johnston-Stewart.

SPEKE'S GAZELLE (*Gazella spekei*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
10½	3½	4½	Somaliland . . .	Hon. Walter Rothschild.
10½	3½	3½	Do. . . .	W. D. James.
10	3½	4½	Do. . . .	Count J. de Bylands.
-10	4	4½	Do. . . .	A. E. Pease.
-10	4	5½	Do. . . .	Julius Jeppe.
-10	3½	2½	Do. . . .	Dr. Percy Rendall.
-9 9½	..	..	Do. . . .	J. Menges.
9 9½	2½	3½	Do. . . .	T. W. H. Clarke.
9 9	2½	5½	Do. . . .	Capt. G. F. T. Leather.
9 8	2½	4	Do. . . .	B. R. M. Glossop.
9 8	2½	3½	Do. . . .	J. Bennett-Stanford.
-9 7½	2	2½	Do. . . .	A. E. Pease.
-9 7½	..	..	Do. . . .	C. V. A. Peel.

Head of Male Speke's Gazelle.



Fig. 1.

Head of Male and Skull of Female Pelzel's Gazelle.

PELZELN'S GAZELLE (*Gazella pelzelni*).

This species, the lowland gazelle of Somaliland, is nearly related to the last, from which it differs by the absence both of the corrugated elevation on the nose and of the black spot on the muzzle. It is also slightly larger than Speke's gazelle, the height at the shoulder being about 25 inches; and its colour is somewhat more rufous, the light lateral band being distinct, and the dark band rufous brown only somewhat darker than the back, without any tendency to blackness. The dark and light bands on the cheeks are relatively short and indistinct.

Distribution.—The plains of Northern Somaliland, bordering the sea. Within fifty miles of the shore this gazelle is exceedingly numerous, and may often be seen in large herds. It is termed by the natives dhero, in common with Speke's gazelle.

PELZELN'S GAZELLE (*Gazella pelzelni*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-13 $\frac{3}{8}$	...	...	Northern Somaliland	J. Menges.
12 $\frac{1}{4}$	3 $\frac{3}{8}$	4 $\frac{1}{4}$	Somaliland	Major H. G. C. Swayne.
12 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	Do.	Lord Delamere.
12 $\frac{1}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	Do.	The late W. Babington.
-12	3 $\frac{1}{4}$	4 $\frac{3}{4}$	Do.	Count E. Hoyos.
12	3 $\frac{3}{4}$	4 $\frac{3}{8}$	Do.	Capt. G. Campbell.
12	3 $\frac{3}{4}$	5 $\frac{1}{4}$	Do.	Viscount Edmond de Poncins.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	T. W. H. Clarke.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	Major H. C. Morland.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	5	Do.	Capt. W. H. Williamson.
11 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	Do.	A. H. Straker.
11 $\frac{1}{4}$	3 $\frac{7}{8}$	4 $\frac{3}{8}$	Do.	Rowland Ward.
-11 $\frac{1}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	S. Payne-Gallwey.
-11 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Do.	A. E. Pease.
-11 $\frac{1}{4}$	4	3 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
-11 $\frac{1}{4}$	3 $\frac{5}{8}$	5	Do.	J. Johnston-Stewart.
11 $\frac{1}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	Do.	Capt. G. F. T. Leather.
11 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Do.	Col. A. Paget.
-11 $\frac{1}{8}$	4	5	Do.	J. Brander Dunbar.
11	3 $\frac{3}{4}$	4 $\frac{1}{8}$	Do.	A. S. Trevor.
11	3 $\frac{3}{4}$	3 $\frac{5}{8}$	Do.	Prince Boris Czetwertynski.
11	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Do.	R. M'D. Hawker.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{8}$	Do.	Sir Edmund G. Loder, Bart.
10 $\frac{3}{8}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Do.	F. G. Gunnis.
-10 $\frac{1}{2}$	3 $\frac{3}{4}$	...	Do.	C. V. A. Peel.
10 $\frac{3}{8}$	3 $\frac{5}{8}$	2 $\frac{7}{8}$	Do.	Julius Jeppe.
♀ 8 $\frac{5}{8}$	...	...	Do.	J. Menges.
-♀ 8 $\frac{1}{2}$	2 $\frac{1}{2}$	...	Do.	C. V. A. Peel.
-♀ 8 $\frac{1}{8}$	...	...	Do.	J. Brander Dunbar.
♀ 8	1 $\frac{7}{8}$	3 $\frac{3}{4}$	Do.	Julius Jeppe.
♀ 7 $\frac{5}{8}$	1 $\frac{3}{4}$	2 $\frac{3}{4}$	Do.	T. W. H. Clarke.

Head of Loder's Gazelle.

LODER'S GAZELLE (*Gazella leptoceros*).

Arab name, *Rhim*.

Although originally described as long ago as the year 1842, very little was known of this gazelle till specimens were procured by Sir E. G. Loder, and described as a new species under the name of *G. loderi*. Further investigation proved them to be inseparable from the species named by F. Cuvier. Agreeing with the preceding members of the group in the white of the rump not invading the haunches, the species is easily recognisable by the long and slender form of the horns, and the very pale tone of the coloration of the upper parts, which may be described as pale sandy fawn, with the characteristic gazelline

markings only indistinctly defined. On the face the dark streaks are sandy instead of rufous; and the light bands on the flanks are almost imperceptible, while the dark ones below them are pale sandy with the very slightest tinge of brown; the tail being sandy at the base and gradually darkening to brownish-black towards the tip. In the male the horns are about twice the length of the head, very slender, and closely and heavily ridged almost to the tips. Height at shoulder about 28 inches. Weight, 34 lbs.

Distribution.—The sandy tracts of the interior of Algeria, Tunisia, and Western Egypt, thence extending southwards into Nubia and Sennar. The native name is rhem or rhim (reem).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{1}{8}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	South of Biskra .	Dr. Dawtrey Drewitt.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. .	F. H. Barber.
14 $\frac{7}{8}$	3 $\frac{1}{8}$	4 $\frac{3}{4}$	Algeria . .	Julius Jeppe.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	3 $\frac{3}{8}$	6 $\frac{3}{8}$	Southern Tunisia .	J. J. S. Whitaker.
14	3 $\frac{7}{8}$	3	Algeria . .	Hon. R. A. Ward.
-14	3 $\frac{1}{8}$	5 $\frac{1}{2}$	Tue Erg . .	A. E. Pease.
14	3 $\frac{3}{8}$	4 $\frac{3}{4}$	Algeria . .	Mr. Justice Hopley.
13 $\frac{1}{8}$	3 $\frac{1}{8}$	5 $\frac{1}{2}$	Do. . .	W. E. Pease.
13 $\frac{1}{2}$	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Southern Tunisia .	Sir Edmund G. Loder, Bart.
-13 $\frac{1}{8}$	...	...	Do. .	A. E. Pease.
-13 $\frac{1}{8}$	...	...	Do. .	J. Menges.
-13 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Sahara . .	Viscount Edmond de Poncins.
13 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{3}{4}$	Do. . .	Rowland Ward.
13 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{4}$	Southern Tunisia .	J. J. S. Whitaker.
13 $\frac{1}{8}$	3 $\frac{3}{8}$	4 $\frac{1}{8}$	Algeria . .	J. H. Thomas.
-12 $\frac{1}{2}$	3 $\frac{3}{4}$	6 $\frac{1}{2}$	Do. . .	Julius Jeppe.
-12 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	Tue Erg . .	A. E. Pease.
12 $\frac{1}{8}$	3 $\frac{1}{8}$	4 $\frac{3}{4}$	Algeria . .	Hon. Walter Rothschild.
♀ -11 $\frac{1}{8}$	...	...	Southern Tunisia .	J. Menges.
♀ 10 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$	South of Atlas Mts. .	Lord Grantley.
♀ 9 $\frac{1}{8}$	2 $\frac{1}{8}$	3 $\frac{7}{8}$	Algeria . .	F. H. Barber.
♀ 9 $\frac{1}{8}$	1 $\frac{7}{8}$	3 $\frac{1}{2}$	Do. . .	Hon. Walter Rothschild.
♀ 9 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{3}{4}$	Tunisia . .	Do.
♀ 9	2 $\frac{1}{2}$	1 $\frac{3}{4}$	Southern Tunisia .	J. J. S. Whitaker.

ISABELLA GAZELLE (*Gazella isabella*).

In all the foregoing gazelles with horns in both sexes, the horns themselves have their tips slightly curved either inwards or upwards, and never bent back so as to form a right angle with the basal portion. On the other hand, the present species and the Muscat gazelle (*G. muscatensis*), while resembling the foregoing in the shape of the white rump-patch and the comparatively light tint of the flank-band, differ by the tips of the horns being hooked inwards or upwards so as to form nearly or completely a right angle. From its ally the present species differs by the pale fawn colour of the upper parts; the lateral bands and other markings being also fawn, instead of blackish. Height at shoulder about 25 inches.

Distribution.—The Red Sea littoral from Suakin to Massowa, and through the interior to Bogosland, Barca, and Taka.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10½	3½	2½	Anseba River, Abyssinia	Sir Victor Brooke's Collection.
10½	3½	4	Komayli, Abyssinia.	W. T. Blanford, British Museum.
9½	3½	2½	Bogosland . .	Sir Victor Brooke's Collection.
-9.14	4	3	Between Suakin and Kassala	Prince Henry of Liechtenstein.
9.11	...	...	Do.	Do.
-8.14	4.2	3.12	Do.	Do.
♀ 7	2	3	Do.	Sir Victor Brooke's Collection.
♀ 7	1½	2½	Kordofan . .	British Museum.

HEUGLIN'S GAZELLE (*Gazella tilonura*).

This well-marked species brings us to a small sub-group in which the dark band on the flanks is very strongly defined, and black in colour; the present species being distinguished from its allies by the abrupt inward hooking of the tips of the horns. The general colour is deep sandy, with the central face-band but little darker than the back, no black nose-spot, and the tail sandy at the base but black elsewhere. Height at shoulder about 27 inches.

Distribution.—Bogosland, in North-Eastern Africa. Very little is known of this rare species.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11½	4	2½	Sudan . . .	Lieut.-Col. Hon. W. Coke.
10½	3½	4½	?	E. Lort-Phillips.
10½	4	2½	Bogosland, Abyssinia	British Museum.
10½	4½	3½	Do.	Do.
10½	4½	2½	North Africa . . .	Col. Ralph Vivian.
9½	4½	1½	Bogosland, Abyssinia	Sir Victor Brooke's Collection.
9½	...	...	Eastern Sudan . . .	J. Menges.
9½	...	1½	Anseba River, Abyssinia . . .	Sir Victor Brooke's Collection.
9½	3½	3½	North Africa . . .	Col. Ralph Vivian.
9½	4½	1½	Do. . . .	Do.
8½	3½	2½	?	Lieut. E. Lacy, R.N.
7½	3½	1½	Bogosland, Abyssinia	British Museum.
♀-6½	...	...	Eastern Sudan . . .	J. Menges.
♀ 5½	1½	1½	Abyssinia . . .	Sir Victor Brooke's Collection.

SENEGAL or RED-FRONTED GAZELLE (*Gazella rufifrons*).

This medium-sized and rather stoutly built species agrees with Heuglin's gazelle in the black flank-stripe, but differs by the absence of a distinct inward hooking of the tips of the horns; the general colour being deep sandy rufous, brightening into rich rufous on the forehead and muzzle, without a black nose-spot. The knee-tufts so generally present in gazelles are wanting; and the tail, with the exception of the sandy upper surface of the basal portion, is black. Horns relatively small, regularly divergent, curving at first slightly backwards and then forwards, heavily ridged till the terminal two or three inches.

Distribution.—Senegal and Gambia.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
10½	4½	6½	Senegal . . .	Sir Victor Brooke's Collection.
♀ 6½	2½	2½	Do. . .	British Museum.

Horns and Ears of Female Thomson's Gazelle.

Head of Male Thomson's Gazelle

THOMSON'S GAZELLE (*Gazella thomsoni*).

Swahili name, *Swallah*.

The distinct black nose-patch and the great width of the black flank-band serve at once to distinguish this handsome species from *G. rufifrons*, with which it agrees in the general form of the horns. The general colour of the upper parts is deep sandy rufous, with all the markings well developed and sharply defined; the central face-streak being a deeper rufous, and the light lateral band present, although only slightly paler than the back. There is also a narrow black band bordering the white on the sides of the rump; and knee-tufts are developed. The horns are long, and rather like those of the Indian gazelle on an enlarged scale. Height at shoulder about 25 inches.

Distribution.—The interior districts of British and German East Africa, from Lake Rudolph southwards to Irangi. Discovered by Joseph Thomson during his expedition to the Victoria Nyanza in 1883-84, and named by Dr. Günther in the latter year.

Measurements of 4 males and 1 female shot by F. J. Jackson, C.B.

	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
Length	3	10	4	1	3	11½	4	4	3	8½
Height	2	1	2	3	2	1½	2	2	1	11½
Weight	52	lbs.	54	lbs.	56	lbs.	62	lbs.	32	lbs.

THOMSON'S GAZELLE (*Gazella thomsoni*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15½	4½	3½	Masailand . . .	F. J. Jackson, C.B.
15½	4½	8½	Do. . . .	E. Gedge.
15½	4½	4½	Do. . . .	F. J. Jackson, C.B., British Museum
15½	4½	4½	East Africa . . .	Major A. E. Smith.
15½	4½	5½	Do. . . .	Lord Basil Blackwood.
-14½	3½	3½	Do. . . .	Julius Jeppe.
14½	4½	4½	Do. . . .	Col. Trevor Ternan.
14½	4½	4½	Do. . . .	Lord Delamere.
14½	4	3½	Do. . . .	Sir Edmund G. Loder, Bart.
-14½	4½	2½	Do. . . .	Count Scheibler.
-14½	4½	5½	Do. . . .	T. E. Buckley.
14½	4½	4½	Masailand . . .	J. Gardiner Muir.
14½	4½	3½	East Africa . . .	Sir Robert Harvey, Bart.
14½	4½	5½	Masailand . . .	H. C. V. Hunter, British Museum.
14½	4½	5	East Africa . . .	Col. Trevor Ternan.
14	4½	4½	Do. . . .	Henry Charrington.
14	4½	3	Do. . . .	S. L. Hinde.
13½	4½	4½	Do. . . .	Col. F. D. Lugard, C.B., D.S.O.
-13½	4½	3½	Do. . . .	Mr. Justice Hopley.
13½	4½	5	Lake Naivasha . . .	J. Ponsonby.
13½	4½	4½	Do. . . .	Sir Robert Harvey, Bart.
13½	4½	5½	Do. . . .	Hon. Walter Rothschild.
-13½	3½	7½	East Africa . . .	Julius Jeppe.
-13½	3½	5½	Do. . . .	A. Ohlsson.
13½	4½	4½	Lorogi District . . .	A. H. Neumann.
13½	4	5	East Africa . . .	E. J. L. Berkeley.
13½	4½	5½	Do. . . .	Capt. J. W. Pringle.
13	4½	4	Do. . . .	W. Astor Chanler.
13	4½	6	Do. . . .	J. Gardiner Muir.
13	4½	4½	Do. . . .	G. E. Smith.
-12-12	4	3-13	Do. . . .	Prince Henry of Liechtenstein.
♀ 5½	1½	3½	Lake Naivasha . . .	F. J. Jackson, C.B.

Skulls and Horns of Grant's Gazelle (male and female), from A. H. Neumann's specimens.

GRANT'S GAZELLE (*Gazella granti*).

With this handsome species we reach the last group of the genus *Gazella*, which includes species, for the most part of large size, characterised by the fawn colour of the back being invaded to a greater or less degree by the white of the rump. In the present animal the fawn of the back is cut off from the tail, which is included in the white rump-patch, and there is a dark streak on the hinder border of each side of this patch. On the neck and back the hair has a peculiar wavy appearance recalling that of watered silk. Height at shoulder about 38 inches; weight of male from 150 to 170 lbs., when cleaned about 115 lbs.

Distribution.—East Africa, throughout Masailand, and round Kilimanjaro, north of Baringo, and around Mount Elgon and the Suk country; generally on open grass-lands. Two well-defined local races of this species may be recognised. First, the typical race (*G. granti typica*), of the interior of East Africa, in which the dark

flank-bands are either wanting, or are present in young specimens below the light flank-band. Secondly, the northern race (*G. granti notata*), of Northern British East Africa, in which dark bands are present both above and below the light band, behind which they unite with each other. Although described by O. Thomas in 1897 as a local race, the latter form was raised by him to the rank of a distinct species in the following year.

F. J. Jackson says they are found "throughout the Masai country, up in Turkwel and Suk country. Those from Njemps, Turkwel and Suk are smaller than those from Kilimanjaro, Naivasha, Athi plains, etc. In the Njemp district a 20-inch head is good."

Measurements of 4 male specimens shot by the last-named sportsman.

	ft.	in.	ft.	in.	ft.	in.	ft.	in.
Length . .	5	8	5	7	5	7	5	3 ¹
Height . .	3	1½	3	2½	3	6½	2	11
Horns . .		28½		27		24		20
Weight . .		158 lbs.		167 lbs.		166 lbs.		135 lbs.
Habitat .	Lake Naivasha, Lake Naivasha, Lake Naivasha, Njemp.							

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
28½	6½	15½	East Africa . . .	F. J. Jackson, C.B.
27½	6½	18½	Do. . . .	H. C. V. Hunter.
27½	6½	16	Do. . . .	F. J. Jackson, C.B.
27½	6½	18½	Do. . . .	Sir Robert Harvey, Bart.
27	...	16	Do. . . .	Sir John Willoughby, Bart.
26½	6½	13½	Shores of Lake Naivasha .	A. H. Neumann.
26½	7½	18	East Africa . . .	Major A. E. Smith.
26½	6½	16½	Do. . . .	Sir Victor Brooke's Collection.
26	6½	10½	N.E. of Lake Rudolph .	A. H. Neumann.
25½	6½	15	E. Africa . . .	Lord Delamere.
25½	6	17	Do. . . .	J. Gardiner Muir.
25½	6½	15	Do. . . .	Lord Delamere.

¹ This was the old buck of a herd in which there were three or four other bucks. It was in good condition. I saw a lot of other bucks, but none had horns more than 20 inches.

GRANT'S GAZELLE (*Gazella granti*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25 $\frac{1}{8}$	6 $\frac{1}{2}$	15 $\frac{8}{8}$	E. Africa	Capt. R. A. J. Montgomerie, C.B., R.N.
-25.11	6.8	13.14	Do.	Prince Henry of Liechtenstein.
-25.10	6.1	15.14	Do.	Do.
25	6 $\frac{8}{8}$	12 $\frac{2}{8}$	Nakuru Lake, E. Africa .	G. E. Smith.
25	6 $\frac{1}{2}$	14	Kilimanjaro	T. W. Greenfield.
24 $\frac{2}{8}$	6 $\frac{2}{8}$	12 $\frac{1}{2}$	East Africa	S. L. Hinde.
24.13	6.14	14.10	Do.	Prince Henry of Liechtenstein.
24 $\frac{1}{2}$	6 $\frac{2}{8}$	13 $\frac{1}{2}$	Do.	E. J. L. Berkeley.
24 $\frac{1}{2}$	7 $\frac{8}{8}$	14	Do.	Sir Edmund G. Loder, Bart.
24 $\frac{1}{2}$	6 $\frac{1}{2}$	11 $\frac{2}{8}$	N.E. of Lake Rudolph .	Hon. Walter Rothschild.
24	7 $\frac{1}{2}$	8 $\frac{1}{2}$	East Africa	Henry Charrington.
23 $\frac{1}{2}$	6 $\frac{8}{8}$	13 $\frac{8}{8}$	Do.	Capt. E. J. Tickell.
23 $\frac{1}{2}$	6 $\frac{1}{2}$	13	Do.	Major W. H. Williams.
23	6 $\frac{1}{2}$	13 $\frac{8}{8}$	Do.	Col. F. D. Lugard, C.B., D.S.O.
23	7 $\frac{1}{2}$	9	Do.	E. Gedge.
-23	6 $\frac{1}{2}$	9 $\frac{1}{2}$	Do.	Julius Jeppe.
♀ 17 $\frac{1}{2}$	3 $\frac{2}{8}$	9	Do.	H. C. V. Hunter.
♀ 17	...	6	Lake Jipé	Sir John Willoughby, Bart.
♀ 16 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{8}{8}$	E. Africa	Lord Delamere.
♀ 15	4	6 $\frac{2}{8}$	Do.	E. Gedge.

✓
 Skulls and Horns of Peters's Gazelle (male and female),
 from A. H. Neumann's specimens.

PETERS'S GAZELLE (*Gazella petersi*).

This species belongs to the same group as Grant's gazelle and the aoul, showing the same extension of the white of the rump on to the back. It has a dark band separating the white of the rump from the fawn of the back, and differs from the other species showing the same feature by the fawn colour of the back being continued in the middle line on to the base of the tail, which is otherwise black. Height at shoulder about 26 inches.

Distribution.—Coast districts of East Africa.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
22½	6½	5½	Shererini	F. J. Jackson, C.B., British Museum.
21¾	5½	8½	Pica Pica, B.E.A. . . .	L. E. Caine, British Museum.
20½	6½	8½	Ndura	C. Steuart Betton.
19	6	5½	Taru Desert	Lieut. G. H. Welch, R.N.
17¾	5½	7½	Near Pica Pica	A. H. Neumann.
♀ 10½	3	4½	Do. . . .	Do.

Head of Soemmerring's Gazelle, from a specimen shot by G. H. Cheetham.

SÖMMERRING'S GAZELLE (*Gazella soemmerringi*).

Somali name, *Aoul*. Abyssinian name, *Meidafhel*.

Abyssinian (Danakil) name, *Maédedo*.

In addition to the forward extent of the white rump-patch, the leading characteristics of this splendid species are to be found in the absence of a black streak dividing the sides of the rump-patch from the fawn of the body, the black-tipped tail, and the very distinct inward hooking of the horns. The ears are long and bordered with black externally, and the face markings well-defined and nearly black. Height at shoulder about 30 to 36 inches. Weight clean about 70 to 90 lbs.

Distribution.—The Abyssinian coast of the Red Sea, Berber, East Sennar, Danakil, and Somaliland; in the latter country occurring all over the Haud and Ogaden.

a. Gazella sommerringi berberana.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{3}{4}$	5 $\frac{3}{4}$	3 $\frac{5}{8}$	Somaliland . .	G. H. Cheetham.
-20 $\frac{1}{4}$	...	...	Do. . .	Norman B. Smith.
20	5 $\frac{3}{4}$	4	Do. . .	Lieut.-Col. J. W. H. Flanagan.
20	5 $\frac{1}{4}$	5 $\frac{1}{2}$	Danakil . .	Viscount Edmond de Poncins.
♀-20	...	5 $\frac{3}{4}$	Somaliland . .	A. E. Pease.
-20	5 $\frac{7}{8}$	6 $\frac{1}{2}$	Do. . .	Capt. M. M'Neill.
19 $\frac{3}{4}$	5 $\frac{5}{8}$	5 $\frac{1}{4}$	Do. . .	Count J. de Bylands.
-19 $\frac{3}{4}$	5 $\frac{1}{8}$	5 $\frac{5}{8}$	The Haud . .	P. H. G. Powell-Cotton.
-19 $\frac{1}{4}$	...	...	N. Somaliland . .	J. Menges.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{5}{8}$	Somaliland . .	T. W. H. Clarke.
19 $\frac{1}{2}$	5 $\frac{9}{10}$	2	Do. . .	Sir Edmund G. Loder, Bart.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do. . .	J. J. Richardson.
-19 $\frac{1}{2}$	6 $\frac{1}{4}$	3	Do. . .	S. Payne-Gallwey.
-19 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{5}{8}$	Do. . .	Count J. Potocki.
19 $\frac{1}{4}$	6 $\frac{1}{2}$	4 $\frac{3}{4}$	Do. . .	R. McD. Hawker.
19 $\frac{1}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . .	T. W. H. Clarke.
19 $\frac{1}{4}$	5 $\frac{1}{4}$	4 $\frac{1}{2}$	Do. . .	Capt. B. L. Carew.
19 $\frac{1}{4}$	5 $\frac{1}{2}$	...	Do. . .	Surgeon-Major J. S. Edye.
19	5	4	Do. . .	Col. A. Paget.
19	5 $\frac{1}{4}$	4 $\frac{3}{4}$	Do. . .	J. Benett-Stanford.
19	5	7 $\frac{1}{2}$	Do. . .	B. R. M. Glossop.
19	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . .	Ford G. Barclay.
19	5	4	Do. . .	Capt. F. C. Quicke.
-19	4	3 $\frac{1}{4}$	Do. . .	Prince Nicolas Ghika.
-19	5 $\frac{3}{4}$	8	Do. . .	J. Brander Dunbar.
-19	...	4 $\frac{3}{4}$	Do. . .	J. D. Inverarity.
-19	5 $\frac{3}{4}$	5 $\frac{5}{8}$	Do. . .	Mr. Justice Hopley.

SCHEMMERRING'S GAZELLE (*Gazella schemmerringi berberana*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18 $\frac{3}{4}$	5 $\frac{1}{2}$	6	Somaliland	F. H. Barber.
18 $\frac{3}{8}$	5 $\frac{1}{8}$	5 $\frac{1}{2}$	Do.	Capt. G. R. Cuninghame.
18 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{5}{8}$	Do.	Capt. G. Campbell.
18 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	A. H. Straker.
18 $\frac{1}{2}$	5 $\frac{1}{2}$	5	Do.	P. B. Vander-Byl.
18 $\frac{1}{2}$	5	5 $\frac{3}{4}$	Do.	A. Leslie Renton.
18 $\frac{3}{8}$	5 $\frac{1}{8}$	5	Do.	Sir H. Tichborne, Bart.
-18 $\frac{3}{8}$	5	5 $\frac{1}{2}$	Do.	J. Johnston-Stewart.
♀ 18 $\frac{1}{4}$	...	6	Do.	T. W. H. Clarke.
18 $\frac{3}{8}$	5 $\frac{3}{8}$	4 $\frac{1}{2}$	Do.	W. D. James.
18	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	J. Kenneth Foster.
18	5	7 $\frac{3}{8}$	Do.	Major H. C. Morland.
18	5 $\frac{1}{2}$	4	Do.	T. W. Greenfield.
18	5 $\frac{1}{4}$	5 $\frac{3}{4}$	Do.	R. Wahrmann.
18	5	6 $\frac{1}{2}$	Do.	P. R. Denny.
-18	...	4 $\frac{1}{2}$	Do.	A. E. Pease.
18	5 $\frac{3}{8}$	7 $\frac{1}{4}$	Do.	W. W. Ashley.
♀ 18	3 $\frac{1}{2}$	8 $\frac{1}{2}$	Danakil	Viscount Edmond de Poncins.
17 $\frac{7}{8}$	5	5 $\frac{1}{4}$	Somaliland	W. W. Ashley.
-17 $\frac{3}{4}$	5 $\frac{1}{2}$	1 $\frac{1}{8}$	Do.	Count Scheibler.
17 $\frac{3}{4}$	5 $\frac{3}{8}$	4	Do.	Major C. C. Ellis.
-17 $\frac{3}{4}$	4 $\frac{7}{8}$	3 $\frac{1}{2}$	Do.	Julius Jeppe.
-17 $\frac{3}{4}$	6	...	Do.	C. V. A. Peel.
17 $\frac{3}{8}$	5	4 $\frac{7}{8}$	Do.	Prince Boris Czetwertynski.
-17 $\frac{3}{8}$	5	3 $\frac{3}{4}$	Do.	A. E. Leatham.
17 $\frac{1}{2}$	5 $\frac{1}{2}$	6	Do.	Capt. C. S. Timins.
17 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	J. Byng Paget.
17 $\frac{1}{2}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	Do.	W. R. Bindloss.
17 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{3}{4}$	Do.	Digby Davies.
-17 $\frac{1}{2}$	5 $\frac{3}{4}$	4 $\frac{3}{4}$	Do.	A. Ohlsson.

SCHEMMERRING'S GAZELLE (*Gazella scommerringi berberana*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17 $\frac{3}{8}$	6	4	Somaliland . . .	Lord Wolverton.
-17 $\frac{3}{8}$	4 $\frac{5}{8}$	4 $\frac{3}{8}$	Do. ' . . .	Count E. Hoyos.
-♀ 17 $\frac{1}{4}$	...	...	Danakil . . .	Prince de Lucinge.
♀ 16 $\frac{3}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	Somaliland . . .	H.R.H. le Duc d'Orléans.
♀ 16	3 $\frac{1}{8}$	6	Do. . . .	Major H. G. C. Swayne.
♀ 16	3 $\frac{1}{4}$	10 $\frac{1}{2}$	Do. . . .	R. Wahrmann.
b. <i>Gazella scommerringi typica</i>.				
15 $\frac{1}{2}$	5 $\frac{3}{8}$	5	Sudan . . .	Col. Ralph Vivian.
♀ 15 $\frac{1}{4}$	2 $\frac{7}{8}$	7 $\frac{3}{8}$	Do. . . .	Lieut.-Col. Hon. W. Coke.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	Near Suakin . . .	B. Cotton.
14 $\frac{1}{2}$	5 $\frac{1}{8}$	5 $\frac{1}{2}$	Eastern Sudan . . .	Major W. H. Besant.
14	5 $\frac{1}{8}$	5 $\frac{3}{4}$	Sudan . . .	Lieut.-Col. Hon. W. Coke.
14	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . . .	Col. A. Paget.
-14	5.12	3.13	? . . .	Prince Henry of Liechtenstein.
-14	5.2	3.1	? . . .	Do.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	6	Sudan . . .	W. D. James.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	4	Do. . . .	Sir Victor Brooke's Collection.
13 $\frac{1}{2}$	5 $\frac{3}{8}$	5 $\frac{5}{8}$	Suakin . . .	Hon. Walter Rothschild.
12 $\frac{3}{4}$	5	5	Abyssinia . . .	Sir Edmund G. Loder, Bart.
♀ 12 $\frac{5}{8}$	3 $\frac{1}{2}$	8 $\frac{1}{4}$	Sudan . . .	Col. Ralph Vivian.
♀ 12	3 $\frac{1}{4}$	5 $\frac{1}{8}$	Abyssinia . . .	Sir Victor Brooke's Collection.
♀ 8 $\frac{1}{2}$	3 $\frac{3}{4}$	5	Sudan . . .	Hon. Walter Rothschild.

ADDRA GAZELLE (*Gazella ruficollis*).

The last three representatives of the genus *Gazella* are not only the largest of the tribe, but are distinguished from all their relatives by the white of the rump extending on to the tail (which is either wholly white or merely tipped with fawn) coupled with the complete absence of a black band between the white of the rump-patch and the fawn of the body; the horns being hooked upwards and forwards, and not

distinctly inwards. In the present species, which measures about 36 inches at the shoulder, the neck and front portion of the back alone display a distinctly rufous tint, the lines of division between the fawn of the upper parts and the white beneath being obscure.

Distribution.—Kordofan and Sennar.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{1}{2}$	4	5 $\frac{3}{8}$	Sennar	British Museum.
11 $\frac{7}{8}$	5 $\frac{3}{8}$	$\frac{3}{8}$	Kordofan	Do.

DAMA GAZELLE (*Gazella dama*).

Together with its northern representative the mhorr of Morocco, the dama differs from the aoul by the rufous tint extending completely over the body and flanks, and being well defined from the white of the under parts. In the present form, which is from Senegal, the sides of the thighs are white, so that the rufous of the body is cut off from that of the hind-legs. The height is at least 35 inches.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{5}{8}$	5 $\frac{3}{8}$	5 $\frac{1}{2}$	?	Paris Museum.
12 $\frac{1}{2}$	5 $\frac{1}{2}$	6	?	Mr. Justice Hopley.
12 $\frac{1}{2}$	5 $\frac{1}{8}$	3 $\frac{9}{16}$	Senegambia	Paris Museum.
8 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	?	Hon. Walter Rothschild.

MHORR or SWIFT GAZELLE (*Gazella dama mhorr*).

Although commonly regarded as a distinct species, this fine but somewhat leggy gazelle seems to be only a northern race of the dama gazelle of Senegal, which is the largest member of the genus. The mhorr, as it is called by the Arabs, differs from the dama by the sides of the thighs and legs being of the same rufous hue as the body, instead of white. Height at shoulder at least 34 $\frac{1}{2}$ inches.

Distribution.—The desert districts of South-West Morocco.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{4}$	6	3 $\frac{3}{4}$	Wednoon, Mogador	W. Willshire, British Museum.
4 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	Morocco	Dr. Percy Rendall.

Skull and Horns of Dibatag, from a specimen shot by T. W. H. Clarke in Somaliland.

DIBATAG or CLARKE'S GAZELLE (*Ammodorcas clarkii*).

Although resembling the true gazelles in the face-markings, the dibatag, as it is called by the Somalis, is so different from these animals as to be entitled to constitute a genus by itself; being in many respects intermediate between the former and the gerenuk. The horns, which are present only in the males, are rather short, and have a regular upward and forward curvature, somewhat like those of a reed-buck; they are ridged on the front for a considerable portion of their length. The neck is considerably elongated, and the tail long and thin. The general colour of the upper parts is a deep cinnamon. Height at shoulder about 33 inches; weight from 65 to 70 lbs. When running, the long neck is thrown back towards the tail, which is elevated, so that the two look as though they would touch. Discovered by T. W. H. Clarke.

Distribution.—Central Somaliland, in the eastern districts of the Haud.

DIBATAG or CLARKE'S GAZELLE (*Ammodorcas clarkei*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-13	...	...	Somaliland . . .	J. D. Inverarity.
-13	...	...	Do.	J. Menges.
12 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Hon. Walter Rothschild.
11 $\frac{3}{4}$	4 $\frac{7}{8}$	3 $\frac{3}{4}$	Do.	Col. Arthur Paget.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	3 $\frac{3}{4}$	Do.	T. W. H. Clarke.
-11 $\frac{3}{4}$	4 $\frac{1}{2}$	5	Do.	J. Brander Dunbar.
11 $\frac{1}{2}$	4 $\frac{1}{2}$	6	Do.	R. McD. Hawker.
11	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Capt. F. C. Quicke.
11	5 $\frac{1}{2}$	2 $\frac{1}{2}$	Do.	B. R. M. Glossop.
11	5	5 $\frac{1}{2}$	Do.	S. Payne-Gallwey.
10 $\frac{3}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Mr. Justice Hopley.
-10 $\frac{3}{4}$	5 $\frac{1}{2}$	4	Do.	Sir Edmund G. Loder, Bart.
-10 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	A. E. Pease.
-10 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{7}{8}$	Eidegalla, Haud . . .	J. Johnston-Stewart.
-10 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	Somaliland	C. V. A. Peel.
-10 $\frac{1}{8}$	4 $\frac{1}{2}$	4 $\frac{7}{8}$	Somaliland	Rowland Ward.
10 $\frac{3}{8}$	4 $\frac{3}{8}$	4 $\frac{1}{2}$	West of Hargeisa . . .	P. H. G. Powell-Cotton.
-10	4 $\frac{1}{2}$	4 $\frac{1}{2}$	Somaliland	C. V. A. Peel.
10	4 $\frac{1}{2}$	4	Do.	Count J. de Bylands.
-10	4 $\frac{1}{2}$	4 $\frac{3}{8}$	?	Julius Jeppe.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{8}$	Somaliland	T. W. H. Clarke, British Museum.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Major H. G. C. Swayne.
9 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	B. Vincent.
-9 $\frac{1}{4}$	4 $\frac{3}{8}$	4 $\frac{1}{2}$	Dalbahanta Country . .	Dr. Percy Rendall.
-9 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	?	A. Ohlsson.
9	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Dalbahanta Country . .	A. S. Trevor.
9	4 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	Lord Delamere.
8 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{1}{2}$	Do.	W. H. Cobb.
8 $\frac{3}{4}$	4	4 $\frac{3}{4}$	Do.	T. W. Greenfield.

DIBATAG or CLARKE'S GAZELLE (*Ammodorcas clarkei*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
8½	4	3	Dalbahanta Country	Count Grudzinski.
8	4	3½	Do. . . .	H.R.H. le Duc d'Orléans.
7½	4	4½	Do. . . .	Ford G. Barclay.

/ X \

Head of Male Dibatag.

Head of Male Gerenuk, from a specimen shot by H. R. H. le Duc d'Orléans.

GERENUK or WALLER'S GAZELLE (*Lithocranius walleri*).

Somali name, *Gerenuk*. Danakil name, *Gudan Godu*.

Even more aberrant than the last is the Gerenuk, in which the elongation of the neck attains its supreme development, while the slender legs are lengthened in proportion. Horns are wanting in the females, and those of the males curve forwards at the tips, where the ridges stop, in a peculiarly characteristic manner. The general colour of the upper parts is a deep rufous fawn, but down the middle of the back runs a broad dark-brown band, nearly eight inches in width. The skull is characterised by its dense and solid structure, as well as by its straightness, the shortness of the facial portion, and the very small size of the cheek-teeth. Height at shoulder, 41 inches; weight, 115 lbs. (T. W. H. Clarke).

This curious antelope, which was first described by the late Sir V.

Brooke on the evidence of a flat skin, is reported to rear itself on its hind-legs when browsing, and is thus enabled to reach boughs at a very considerable distance above the ground.

The horns of the specimens from Somaliland are, as a rule, very much longer than those from British East Africa, as will be seen by reference to the list below.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17	5½	3¾	Somaliland . . .	H.R.H. le Duc d'Orléans. (See illustration.)
-16¾	...	...	Do. . . .	Lieut.-Col. H. G. Mainwaring.
-16½	5¾	3½	Do. . . .	E. L. Cappel.
16½	5½	1½	Do. . . .	Mr. Justice Hopley.
-16¼	5½	2½	Do. . . .	The late J. Rose.
-16½	...	...	Northern Somaliland . .	J. Menges.
16	5½	6	Do. . . .	Sir Edmund G. Loder, Bart.
15¾	6	4¾	Do. . . .	Rowland Ward.
-15¾	6	2¾	Do. . . .	A. E. Pease.
15½	5½	3	Do. . . .	J. Kenneth Foster.
-15½	5½	4½	Do. . . .	F. H. Barber.
15½	5½	4	Do. . . .	Major H. G. C. Swayne.
15½	5½	4½	Do. . . .	C. Liddell.
15½	5½	4½	Do. . . .	Lord Wolverton.
-15¼	5½	1½	Do. . . .	J. Johnston-Stewart.
15	5½	6½	Do. . . .	F. G. Gunnis.
15	5	4¾	Do. . . .	Capt. J. M'Call Maxwell.
-15	6	...	Do. . . .	Lieut.-Col. J. W. H. Flanagan.
-15	5	4	Do. . . .	Sir H. B. Meux, Bart.
-14½	5½	7½	Do. . . .	H.R.H. le Duc d'Orléans, Paris Museum.
14¾	5½	4¾	Do. . . .	Lord Delamere.
14¾	5½	3¾	Do. . . .	J. J. Richardson.
14½	5	5	Do. . . .	Count J. de Bylands.
-14½	5½	7½	Do. . . .	Count Scheibler.
-14½	4¾	4	Do. . . .	Count E. Hoyos.
14½	6½	4½	Do. . . .	Capt. F. C. Quicke.

GERENUK or WALLER'S GAZELLE (*Lithocranius walleri*)—*continued.*

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	4 $\frac{1}{2}$	Northern Somaliland	A. Leslie Renton.
14 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	Do.	W. W. Ashley.
14	...	3	East Africa	Sir John Willoughby, Bart.
14	6 $\frac{3}{4}$	4 $\frac{1}{2}$	Somaliland	W. H. Cobb.
14	5	3 $\frac{1}{8}$	Do.	Col. A. Paget.
14	5 $\frac{3}{4}$	6 $\frac{1}{4}$	Do.	P. B. Vander-Byl.
14	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Ford G. Barclay.
14	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Viscount Edmond de Poncins.
-14	6	5	Do.	S. Payne-Gallwey.
-14	5 $\frac{1}{2}$	4	Do.	P. H. G. Powell-Cotton.
-14	5 $\frac{1}{2}$	3 $\frac{3}{4}$	Do.	J. D. Inverarity.
13 $\frac{7}{8}$	4 $\frac{8}{8}$	5 $\frac{1}{8}$	East Africa	H. C. V. Hunter.
13 $\frac{3}{4}$	4 $\frac{7}{8}$	4 $\frac{1}{8}$	Do.	E. Lort-Phillips.
13 $\frac{3}{4}$	5 $\frac{8}{8}$	2 $\frac{7}{8}$	Northern Somaliland	J. Menges, British Museum.
13 $\frac{3}{4}$	5 $\frac{8}{8}$	3 $\frac{7}{8}$	Somaliland	Hon. Walter Rothschild.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	3	Do.	Capt. G. F. T. Leather.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	5	Do.	Digby Davies.
-13 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Do.	C. V. A. Peel.
-13 $\frac{3}{4}$	5 $\frac{1}{2}$	5	Do.	J. Johnston-Stewart.
-13 $\frac{3}{8}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	East Africa	T. E. Buckley.
12 $\frac{1}{2}$	5 $\frac{3}{8}$	4 $\frac{3}{4}$	Do.	F. J. Jackson, C.B.

Skulls of Beira, from specimens shot by Lord Delamere.

BEIRA (*Dorcatragus melanotis*).

In spite of its presenting a certain superficial resemblance to the members of the oribi group and its allies, this peculiar little antelope is considered to be best placed in the neighbourhood of the gazelles. From all the members of the group in which the latter are included, the beira is at once distinguished by the short and spike-like horns of the bucks. Perhaps its most striking peculiarity is the great size of its ears, which led its discoverer, Herr Menges, to describe it as a species of klipspringer. Another noticeable feature is the large size of the rounded hoofs. In colour, the upper parts and legs are pinkish fawn; a darker band defining the fawn from the white of the under parts, which (the white) is continued down the inner surfaces of the limbs as far as the knees and hocks. The head, from the ears to the nose, is bright rufous. Height at shoulder about 23 inches.

Viscount Edmond de Poncins writes that "they are good hill-climbers, and keep on rocky ground. The general shape is slender, legs are long, the head is kept erect, the ears are very big and broad, shaped like the dik-dik's, eyes big and dark, nostrils black.

"Colour a sort of grayish blue, a bit like what we call in French *gorge de pigeon*, and exactly matching the colour of the ground, so, unless they are on the move, it is difficult to distinguish them. Unlike a gazelle, its tail is generally kept down. Horns resemble those of the klipspringer, but curve forward slightly more." From nose to root of tail $32\frac{5}{8}$, height at shoulder 21 inches, horns 4 inches; weight about 20 lbs.

Distribution.—The interior of Somaliland, where it appears to be rare and local, going about either singly or in pairs, and inhabiting the open desert. The beira was first made known to science in 1894: its habits have lately been well described by Captain P. Z. Cox in the eleventh volume of the *Journal* of the Bombay Natural History Society.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{8}$ ¹	$1\frac{1}{2}$	...	?	Lord Delamere. (See illustration.)
$4\frac{1}{2}$	..	...	Northern Somaliland	J. Menges.
4	2	$2\frac{1}{8}$	French Somaliland	Viscount Edmond de Poncins.
4	$2\frac{1}{2}$	$2\frac{3}{4}$	Somaliland . . .	Sir Edmund G. Loder, Bart.
$3\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{1}{4}$	?	Lord Delamere.
$3\frac{1}{2}$	$1\frac{1}{2}$	...	French Somaliland	Viscount Edmond de Poncins.
$3\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{4}$	?	Lord Delamere.
$2\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	French Somaliland	Viscount Edmond de Poncins.

¹ Length straight $32\frac{1}{2}$ inches, along curves $35\frac{1}{2}$ inches; height at shoulder, $25\frac{1}{2}$ inches; girth, $19\frac{1}{2}$ inches; weight, 23 lbs. as he fell.

Skull and Horns of Sable Antelope, from R. T. Coryndon's specimen.

SABLE ANTELOPE (*Hippotragus niger*).

<i>Impengo</i> of the Masubias.	<i>Qualata inchu</i> of the Bamangwatos
<i>Impalampala</i> of the Swazis and Zulus.	and Makololos.
<i>Ookwa</i> of the Makubas.	<i>Solupe</i> of the Masaras.
<i>Potoquane</i> of the Southern	<i>Utjiele</i> of the Amandebele.
Bechuanas.	<i>Qualata</i> and <i>T'choo</i> in the Barotse country.
<i>Pala-hala</i> of the Swahilis.	<i>Qualata</i> and <i>Tshumu</i> in the Lake
<i>Pala-pala</i> of the Makalakas.	Ngami country.
<i>Nkwalandi</i> in the Chilala and Chibisa countries.	

The group of antelopes which includes the present species, the roan antelope, the gemsbuck, addax, etc., differs very markedly from all those before mentioned. Among the leading features are the scimitar-shaped, conical, or spiral horns, which are placed just over the eyes, and are present in both sexes, the hairy muzzle, the absence of face-glands, and the long, tufted tail. Even more remarkable are the upper molar teeth, which have square grinding-surfaces and tall crowns, like those of oxen.

From the other members of the group the beautiful sable antelope and its near ally the roan antelope are well distinguished by the

scimitar-shaped horns, which arise at an angle with the plane of the face, as well as by the maned neck, the tufts of long hair below the eyes, and the large size of the ears. By far the handsomer of the two is the present species, whose sable coat and great length of horn render the buck the most striking of its tribe. Other distinctive features are the continuance of the white eye-stripe to the muzzle, the length of the mane, and the relatively moderate size of the ears. Height at shoulder about $4\frac{1}{2}$ feet. A single horn in the Florence Museum measured by Mr. F. C. Selous is 61 inches on the front curve.

Distribution.—From about the centre of the Transvaal northwards to Nyasaland and the adjacent districts of South-East and East Africa. Still abundant in parts of Eastern Mashonaland, and thence towards the coast, as well as on the Manica plateau to the north of the Zambesi. Scarcer in Central East Africa and Mozambique. Admired by all who have seen it in its native haunts, the sable antelope when wounded is a dangerous antagonist, to be approached with extreme caution. It runs with considerable speed, and possesses much staying power.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-47 $\frac{1}{8}$	...	...	Rhodesia	Measured by F. C. Selous (Fielden's specimen).
47 $\frac{1}{2}$	9 $\frac{1}{2}$	26 $\frac{1}{2}$	?	R. T. Coryndon. (See illustration.)
-46	...	...	Eastern Border of Transvaal	W. Russell Bowker.
45 $\frac{1}{2}$	9 $\frac{1}{4}$	15 $\frac{1}{2}$	Mashonaland	Major G. A. L. Carew, D.S.O.
45 $\frac{3}{8}$	10	14 $\frac{3}{4}$	Lebombo Mountains . .	F. Vaughan Kirby.
45 $\frac{1}{4}$	9 $\frac{1}{2}$	12 $\frac{1}{4}$	S.E. Mashonaland . . .	J. G. Millais.
-45 $\frac{1}{4}$	...	12 $\frac{1}{4}$	Pandamatenka	R. T. Coryndon.
-45 $\frac{1}{2}$	9 $\frac{1}{2}$	20 $\frac{1}{2}$	?	Mr. Justice Hopley.
-45	...	...	Batoka Country	R. T. Coryndon.
-45	10 $\frac{1}{2}$	...	South Africa	Earl of Dartmouth.
-45	...	...	Angwa River	Capt. J. A. Spreckley.
44 $\frac{3}{4}$	10 $\frac{3}{8}$	13 $\frac{1}{2}$	Barotseland	H. Timmins.
44 $\frac{1}{2}$	9 $\frac{1}{4}$	16	?	R. T. Coryndon.
44 $\frac{1}{2}$	9	17	Transvaal	J. P. Fitzpatrick.
-44 $\frac{1}{2}$	...	...	?	H. T. and A. H. A. Glynn.
-44 $\frac{1}{2}$	(single horn)		Batoka Country	F. V. Worthington.

SABLE ANTELOPE (*Hippotragus niger*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
44 $\frac{3}{8}$	9 $\frac{1}{2}$	14	Eastern Transvaal . .	F. Vaughan Kirby.
44 $\frac{1}{8}$	9 $\frac{1}{2}$	8 $\frac{1}{2}$	Eastern Mashonaland .	F. C. Selous.
-44	...	...	Batoka Country . .	F. V. Worthington.
-44	...	...	Lydenburg . .	F. H. Barber.
-44	10	32 $\frac{1}{2}$	?	Berlin Museum.
-43 $\frac{3}{4}$	9 $\frac{7}{8}$	8	Matabeleland . .	Count E. Hoyos.
43 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
43 $\frac{1}{2}$	9 $\frac{3}{4}$	15	Matabeleland . .	The late J. S. Jameson.
43 $\frac{1}{2}$	9 $\frac{1}{2}$	10 $\frac{1}{2}$	Mashonaland . .	S. Chillingworth.
43	10 $\frac{3}{8}$	16 $\frac{1}{8}$	Chobe Valley . .	F. C. Selous.
43	9 $\frac{3}{4}$	6 $\frac{1}{2}$	Do. . .	F. C. Selous, British Museum.
43	...	...	Do. . .	Major Hon. R. T. Lawley.
43	10 $\frac{1}{2}$	13	Mashonaland . .	Major H. J. Goold-Adams, C.B., C.M.G.
42 $\frac{7}{8}$	9 $\frac{3}{4}$	4 $\frac{7}{8}$	Eastern Transvaal . .	F. Vaughan Kirby.
42 $\frac{3}{4}$	9 $\frac{3}{8}$	12 $\frac{1}{2}$	Mashonaland . .	J. A. Jameson.
42 $\frac{3}{8}$	9 $\frac{7}{8}$	9 $\frac{1}{2}$	South Africa . .	Bethnal Green Museum
42 $\frac{1}{2}$	9 $\frac{3}{4}$	6	Mashonaland . .	G. H. M. Banks.
-42 $\frac{1}{2}$	...	...	?	Cape Town Museum.
42 $\frac{1}{2}$	9 $\frac{1}{2}$	5	Rhodesia . .	W. W. Ashley.
-42	10	3 $\frac{1}{2}$	South Africa . .	Dublin Museum.
-42	...	...	Transvaal . .	Cape Town Museum.
-42	...	...	S.E. Mashonaland . .	J. G. Millais.
41 $\frac{3}{4}$	9 $\frac{3}{8}$	12	Do. . .	A. Beit.
41 $\frac{3}{4}$	...	9 $\frac{1}{2}$	Do. . .	A. C. Fountaine.
41 $\frac{3}{4}$	9 $\frac{1}{2}$	9	Muchinga Plateau, Northern Rhodesia	F. Smitheman.
41 $\frac{1}{2}$	9	5 $\frac{1}{2}$	Do. . .	C. D. Rudd.
41 $\frac{1}{2}$	9 $\frac{3}{4}$	16 $\frac{1}{2}$	?	Col. F. Rhodes, D.S.O.
41 $\frac{1}{2}$	10	12 $\frac{3}{8}$	S.E. Mashonaland . .	Hon. Walter Rothschild.
41 $\frac{1}{2}$	10 $\frac{3}{8}$	11 $\frac{1}{2}$	Sabi River . .	Earl of Dunmore.

SABLE ANTELOPE (*Hippotragus niger*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
41½	9	10½	South Africa . . .	R. A. Cooper.
-41½	8½	17½	Do. . . .	Julius Jeppe.
41	9½	10½	Matabeleland . . .	W. Van Ness.
41	10	12	Do. . . .	Hon. R. A. Ward.
41	9½	12½	Do. . . .	Capt. Sir K. Fraser, Bart.
41	9½	12	Do. . . .	Major James Grant.
-41	9½	9	Pungwe	James J. Harrison.
40½	8	13	N.E. Transvaal . . .	A. M. Naylor.
-40½	9½	15	Sabi Flats	Dr. Percy Rendall.
40½	9½	16	Upper Zambesi . . .	M. C. Greaves-Bagshawe.
40½	10	13	?	F. Struben.
40½	9½	13	Matabeleland . . .	Hon. R. A. Ward.
-40½	9½	15½	South Africa . . .	Dr. W. P. Y. Bainbrigge.
40	10	22	Matabeleland . . .	Abe Bailey.
40	9½	10½	Near Ruo River, S.E. Africa	C. C. Bowring.
-40	...	...	Nyasaland	S. Pulley.
-40	10	13½	South Africa . . .	A. Ohlsson.
-39½	...	...	?	O. R. Dunell.
-39½	...	...	Mashonaland . . .	J. Vaughan.
9 39½	6½	6½	Do. . . .	F. C. Selous.
39	10	7½	Do. . . .	F. B. Dunsford.
39	9	10½	?	Sir Victor Brooke's Collection.
38½	9½	2½	Matabeleland . . .	Rev. Dr. R. J. Nevin.
38½	8½	13	Pungwe	Capt. F. H. Lehmann.
38½	9½	9	Matabeleland . . .	Duke of Roxburghe.
38½	9	15½	Do. . . .	Hon. C. Greville.
38	9½	14½	Mashonaland . . .	D. Norman Ritchie.
37	9	14	Matabeleland . . .	Hon. John Ward.
-37	...	...	?	C. T. Jones.

SABLE ANTELOPE (*Hippotragus niger*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner
32½	9	15½	British Central Africa . . .	J. E. Gough.
♀ 35½	6½	...	Lebonibo Mountains . . .	F. Vaughan Kirby.
♀ 34½	6½	10	Matabeleland . . .	Hon. R. A. Ward.
♀ 33½	6½	12½	?	G. Richards.
♀ 33½	6½	3½	Sabi Flats . . .	Dr. Percy Rendall.
♀ 32	..		Mashonaland . . .	F. C. Selous.
- ♀ 32	...		?	H. T. and A. H. A. Glynn.
♀ 31½	7	12½	Algoa Bay . . .	British Museum.
♀ 31	7	7½	Matabeleland . . .	J. A. Pease.
♀ 30	6½	11½	Do. . .	Lord Brackley.

Head of Sable Antelope, from a specimen shot by F. C. Selous.

Head of Roan Antelope, from a specimen shot by F. C. Selous.

ROAN ANTELOPE (*Hippotragus equinus*).

<i>Ee-taka</i> of the Amandebele.	<i>Mtagaisi</i> of the Swazis and Zulus.
<i>Ee-pala-pala chena</i> of the Makalakas.	<i>Oo-ka-mooh-we</i> of the Makubas.
<i>Impengo eetuba</i> of the Masubias.	<i>Qualata</i> of the Northern Bechuanas.
<i>Kwar</i> of the Masaras.	<i>Qualata</i> and <i>Etsetla</i> in the Lake Ngami country.
<i>Klabakila</i> of the Basuto.	<i>Qualata</i> and <i>Tseu</i> in the Barotse country.
<i>M'pelembe</i> in the Chilala and Chibisa countries.	
<i>Tai-hait-sa</i> of the Southern Bechuanas.	

In spite of its larger size (height at shoulder about 4 feet 9 inches), the shorter horns and mane, the larger ears and eye-tufts, and, above all, the grizzled roan coat, render the present species a much less striking animal than its sable cousin. A marked character of the face of the roan antelope is the cutting-off of the white eye-stripe from the muzzle by a transverse dark bar connecting the dark nose-streak with the brown of the cheeks; while the dark nose-streak itself likewise stops short of the muzzle, which is thus wholly white.

Distribution.—From north of the Vaal and Orange Rivers through East and East Central Africa to the Sudan and Abyssinia, and westward to Angola, Nigeria, Gambia, and Senegambia. Recently the name *H. rufopallidus* has been applied to an antelope from East Africa, but it would seem unlikely that this can be anything more than a

local race of the present species. Gordon Cumming shot the roan antelope just north of the Orange River in Griqualand West, where it has for many years been exterminated. Nowhere abundant, the species is most plentiful in Mashonaland and neighbouring districts; in the Transvaal it is only sparsely distributed. South of the Orange River this group of antelopes was formerly represented by the much smaller blaubok, or blue antelope (*H. leucophæus*), long since exterminated.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-35	9½	8½	South Africa . .	A. Ohlsson.
34½	9	7	Okavango Valley .	Major H. J. Goold-Adams, C.B., C.M.G.
33	...	...	Northern Matabeleland	A. C. Fountaine.
32¾	8½	9½	Mashonaland . .	Julius Jeppe.
32	9½	12	Hanyani Valley .	F. C. Selous.
-32	10	13¾	Mashonaland . .	Major A. St. H. Gibbons.
31¾	9½	5½	South Africa . .	Sir Edmund G. Loder, Bart.
31½	9½	11½	Mashonaland . .	F. C. Selous.
-31½	8½	12½	Nyasaland . .	Major P. W. Forbes.
31	8½	13	Mashonaland . .	J. A. Jameson.
-31	10	6¾	?	Mr. Justice Hopley.
-30¾	10	14¾	Sudan . .	Count T. Palffy.
♀ 30½	7	7½	Mashonaland . .	F. C. Selous.
30½	9	13½	South Africa . .	G. Richards.
-30½	10	11½	Portuguese East Africa	F. Vaughan Kirby.
-30½	8½	9	Matabeleland . .	Count E. Hoyos.
-30½	...	...	?	O. R. Dunell.
29½	10½	14½	Matabeleland . .	W. Van Ness.
29½	9½	11½	Mashonaland . .	Hon. Walter Rothschild.
29½	9½	10	Do. . .	Sir John Willoughby, Bart.
29½	9½	4	Bahr-el-Salam, Sudan.	Lieut.-Col. Hon. W. Coke.
-29	...	...	?	Cape Town Museum.
-29	...	...	Batoka Country . .	F. V. Worthington.
-28¾	8½	12½	Gambia . .	Dr. Percy Rendall.

ROAN ANTELOPE (*Hippotragus equinus*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
28 $\frac{5}{8}$	9 $\frac{3}{4}$	9 $\frac{5}{8}$	Mashonaland . . .	F. C. Selous, British Museum.
28 $\frac{1}{2}$	8 $\frac{1}{2}$	...	Sudan . . .	Col. Ralph Vivian.
28 $\frac{1}{2}$	8 $\frac{5}{8}$	9 $\frac{1}{2}$	Mashonaland . . .	S. Chillingworth.
28 $\frac{1}{2}$	9 $\frac{1}{4}$	12 $\frac{3}{4}$	Matabeleland . . .	Hon. R. A. Ward.
- ♀ 28 $\frac{1}{2}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	?	Dr. W. P. Y. Bainbrigge.
28	9 $\frac{1}{2}$	11 $\frac{1}{2}$	Upper Zambesia . . .	M. C. Greaves-Bagshawe.
28	9	11 $\frac{1}{8}$	Lo Magondi's Country	Earl of Dunmore.
28	9 $\frac{5}{8}$	5	Nigeria . . .	A. W. M. Brodie.
27 $\frac{1}{8}$	8 $\frac{3}{4}$	8 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
27 $\frac{3}{4}$	8 $\frac{7}{8}$	6 $\frac{1}{4}$	Karonga, B.C.A. . .	C. C. Bowring.
27 $\frac{3}{4}$	9 $\frac{3}{4}$	8 $\frac{3}{4}$	Sudan . . .	Hon. Walter Rothschild.
27 $\frac{1}{8}$	9 $\frac{1}{8}$	9	?	J. Carr Saunders.
27 $\frac{1}{2}$	9	11 $\frac{1}{2}$	Matabeleland . . .	G. H. M. Banks.
27 $\frac{3}{8}$	9	10	Barotseland . . .	H. Timmins.
27 $\frac{3}{8}$	9 $\frac{3}{4}$	8 $\frac{1}{2}$	South Africa . . .	A. Beit.
27 $\frac{1}{2}$	10 $\frac{1}{4}$	6 $\frac{3}{4}$	Matabeleland . . .	Rev. Dr. R. J. Nevin.
27 $\frac{1}{2}$	9	10 $\frac{1}{2}$	Dahomey . . .	F. C. Fuller.
-27 $\frac{1}{2}$	9 $\frac{1}{2}$	10 $\frac{5}{8}$	Noggara, Abyssinia . .	J. Menges.
27	9	...	?	Dr. W. P. Y. Bainbrigge.
♀ 27	7	8 $\frac{3}{4}$	British Central Africa .	J. E. Gough.
26 $\frac{7}{8}$	8 $\frac{5}{8}$	10 $\frac{1}{2}$	Gambia . . .	Dr. Percy Rendall, British Museum.
26 $\frac{3}{4}$	8 $\frac{3}{4}$	5 $\frac{3}{4}$	Mashonaland . . .	J. G. Millais.
26 $\frac{1}{2}$	9 $\frac{3}{4}$	14 $\frac{1}{2}$	Matabeleland . . .	Hon. John Ward.
26 $\frac{1}{2}$	9 $\frac{7}{8}$	12	Muchinga Plateau, Northern Rhodesia	F. Smitheman.
-26.3	8.14	13.8	North of Kassala . . .	Prince Henry of Liechtenstein.
26	8 $\frac{3}{8}$	7 $\frac{1}{8}$	Gambia . . .	The late Earl of Derby.
♀ 25 $\frac{7}{8}$	6 $\frac{3}{4}$	7	Mashonaland . . .	F. C. Selous.
25 $\frac{1}{2}$	9 $\frac{1}{2}$	10 $\frac{1}{2}$	Nigeria . . .	Major A. J. Arnold, D.S.O.
♀ 25 $\frac{1}{2}$	6 $\frac{7}{8}$	...	Do. . . .	J. W. Carroll.
25 $\frac{1}{8}$	9 $\frac{1}{4}$	5 $\frac{3}{8}$	Sudan . . .	Sir Edmund G. Loder, Bart.

ROAN ANTELOPE (*Hippotragus equinus*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25	8½	20¾	Gambia . . .	H. C. Goddard.
♀ 24½	6½	10½	Nigeria . . .	A. W. M. Brodie.
24	9½	14½	Benguela . . .	G. W. Penrice.
♀ 24	6¾	6½	Gambia . . .	H. C. Goddard.
♀ 22½	7	8½	Songwe, B.C.A. . .	C. C. Bowring.
♀ 22½	6¾	8½	Sudan . . .	Hon. Walter Rothschild.
22½	7½	8	Do. . . .	W. D. James.
-22	9	9½	Nigeria . . .	B. R. M. Glossop.
21½	7	9½	Abyssinia . . .	E. Lort-Phillips.
-♀ 21½	...	...	Nigeria . . .	B. R. M. Glossop.
-♀ 20	6½	10¾	?	T. E. Buckley.
19½	8	8¾	Nigeria . . .	Lieutenant-Colonel T. D. Pilcher.
17¾	6½	9½	Abyssinia . . .	British Museum.
12¾	7	7½	British East Africa . .	S. L. Hinde.

Skull and Horns of Gemsbuck, from F. H. Barber's specimen.

GEMSBUCK (*Oryx gazella*).

The long, straight, spear-like horns, of which even the lion fights shy, render the gemsbuck and its more immediate allies an easily recognised sub-group. And even when, as in the white oryx, the horns are scimitar-shaped, they differ from those of the sable antelope by starting in the plane of the face. It is also a noteworthy fact that in

the present species the horns of the females are longer and finer, and therefore more prized, than those of the bulls. An adult gemsbuck stands about 3 feet 9 inches at the shoulder. In addition to the length of its horns, the species is sufficiently characterised by the presence of a tuft of hair on the throat, and the cutting-off of the white eye-stripe from the muzzle by the union of the dark central nose-streak with the black of the cheeks.

Distribution.—The desert regions of South-Western Africa, from the northern Karoos of Cape Colony through the Kalahari and Damaraland to Southern Angola in Mossamedes and perhaps Benguela. North of the Chobe and eastwards of Khama's country the species appears to be unknown. So late as 1846 Gordon Cumming found gemsbuck abundant on the northern Karoos of Cape Colony; and even now a few linger on the plains to the south of the lower reaches of the Orange River. In the northern Kalahari, where they exist for months without water, they are still abundant. The splendid horns of the gemsbuck are always regarded as prime trophies of the hunter's skill; the finding, riding-down, and shooting of one of these wary and enduring desert-bred antelopes being a feat of which any man, however well mounted, may be deservedly proud.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
47½	6¾	17½	South Africa . . .	The late J. S. Jameson.
- ♀ 45½	...	...	Bechuanaland . . .	F. H. Barber. (See illustration.)
♀ 45½	6¼	33¾	Lake Ngami . . .	Major H. J. Goold-Adams, C.B., C.M.G.
45	8½	18½	Do. . . .	Hon. Walter Rothschild.
-44½	...	...	South Africa . . .	Dr. A. Schopf.
-44	6½	17	? . . .	A. Ohlsson.
-43¾	7	21	? . . .	Dr. W. P. Y. Bainbrigge.
43¾	6¾	18½	Nata River . . .	F. C. Selous.
43½	6½	20½	? . . .	Sir Victor Brooke's Collection.
-43½	8	16	? . . .	James J. Harrison.
43¾	6¾	...	Botletli River . . .	F. C. Selous.
43	7	18¾	South Africa . . .	Rowland Ward.
-43	7½	...	? . . .	Earl of Dartmouth.
43	6½	22	? . . .	W. Y. Campbell.

GEMSBUCK (*Oryx gazella*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
42 $\frac{1}{2}$	7	14	?	A. Beit.
42 $\frac{1}{2}$	7	20 $\frac{1}{2}$	Bechuanaland . . .	A. Neilson.
42 $\frac{1}{2}$	7	...	Do. . . .	Major H. J. Goold-Adams, C.B., C.M.G.
42 $\frac{3}{8}$	6 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . . .	Capt. F. H. Lehmann.
-42 $\frac{1}{2}$	7	23 $\frac{1}{2}$	?	A. Ohlsson.
-42	6 $\frac{5}{8}$	22	?	Julius Jeppe.
42	6 $\frac{1}{8}$	20 $\frac{3}{4}$	?	A. Ryley.
-41 $\frac{7}{8}$	8	15 $\frac{5}{8}$	Great Namaqualand . .	Th. Rehbock.
41 $\frac{1}{2}$	7	22 $\frac{3}{4}$	?	C. D. Rudd.
♀ 41 $\frac{1}{2}$	6 $\frac{1}{2}$	22 $\frac{3}{4}$	?	Mr. Justice Hopley.
♀ 41 $\frac{1}{8}$	5 $\frac{1}{8}$	29 $\frac{7}{8}$	Great Namaqualand . .	Th. Rehbock.
♀ 41	7	19	?	Major R. Hayes-Sadler.
♀ 40 $\frac{3}{4}$	6 $\frac{5}{8}$	17 $\frac{7}{8}$	Cunene River . . .	Capt. F. Cookson.
-40 $\frac{3}{4}$	...	...	?	O. R. Dunell.
40 $\frac{5}{8}$	6 $\frac{3}{4}$	16 $\frac{1}{2}$	?	Lewis Atkinson.
-40 $\frac{1}{2}$	6 $\frac{1}{2}$	18 $\frac{1}{2}$	South Africa . . .	R. C. Peake.
-♀ 40 $\frac{1}{2}$	...	...	?	O. R. Dunell.
40	6 $\frac{7}{8}$	18 $\frac{1}{2}$	South Africa . . .	Sir Edmund G. Loder, Bart.
-♀ 40	...	...	Do. . . .	Cape Town Museum.
-♀ 39 $\frac{3}{4}$	6 $\frac{1}{2}$	15 $\frac{1}{2}$	Do. . . .	Julius Jeppe.
39 $\frac{1}{2}$	6 $\frac{3}{4}$	18	Bechuanaland . . .	Lieut.-Col. W. Sitwell.
39	7 $\frac{1}{2}$	22	?	R. A. Cooper.
39	6 $\frac{1}{2}$	16	South Africa . . .	A. J. Forbes.
♀ 38 $\frac{1}{2}$	6 $\frac{5}{8}$	15 $\frac{7}{8}$	Kalahari . . .	H. A. Bryden.
38	...	18 $\frac{3}{4}$	Bechuanaland . . .	A. C. Fountaine.
38	8 $\frac{1}{2}$	8 $\frac{1}{2}$	South Africa . . .	F. E. Potter.
-38	7	18	Do. . . .	A. E. Pease.
-38	...	...	?	C. T. Jones.
♀ 37	6 $\frac{1}{2}$	17 $\frac{1}{2}$	South Africa . . .	Dr. W. P. Y. Bainbrigge.
♀ 36 $\frac{3}{4}$	6 $\frac{5}{8}$	...	North Bechuanaland . .	F. C. Selous, British Museum.



Head of Beisa.

BEISA (*Oryx beisa*).

Beida of the Somalis. *Sala* of the Abyssinians of Danakil.

The beisa may be regarded as the north-eastern representative of the gemsbuck, from which it may be distinguished at a glance not only by the absence of a tuft of hair on the throat, but also by the separation of the black nose-stripe from the eye-stripes. There is also no black on the haunches or thighs, and the horns are considerably shorter and less divergent. Height at shoulder reaching to about 4 feet. Weight 458 lbs. (F. J. Jackson, C.B.).

Distribution.—North-East Africa, from Suakin through Abyssinia to Berbera in Somaliland, and south to Lake Baringo and the Equator.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40	...	...	?	Measured by A. O. Hume, C.B., at Aden.
9 39	5½	8	Near Hargeisa, Somaliland	E. P. Hare.
37½	7	11½	Somaliland . . .	G. D. E. Chapman.
36½	6½	6½	Do. . . .	Prince Boris Czertwertynski.
— 9 36½	.	...	Northern Somaliland .	J. Menges.
36	7	6½	Somaliland . . .	G. D. E. Chapman.
36	6½	7½	East of Lake Rudolph	A. H. Neumann.

BEISA (*Oryx beisa*)—continued.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
36	6½	10½	50 miles from coast of Somaliland	Capt. J. T. Brinkley.
36	6	8½	Somaliland . . .	Count J. Potocki.
- ♀ 36	...	...	Do. . . .	Dr. Donaldson Smith.
35½	6½	9½	Do. . . .	Lord Delamere.
♀ 35½	5½	8	Do. . . .	R. Wahrmann.
35½	6½	8½	Do. . . .	Prince Nicolas Ghika.
♀ 35½	6	10½	East of Lake Rudolph	A. H. Neumann.
35	6	9	Somaliland . . .	Col. Arthur Paget.
♀ 35	5½	7½	Danakil . . .	Viscount Edmond de Poncins.
35	5½	7½	Somaliland . . .	A. S. Trevor.
-35	6½	6½	Do. . . .	J. Johnston-Stewart.
♀ 34½	5½	8½	Do. . . .	G. M. Norrie.
♀ 34½	6	10½	Do. . . .	Capt. J. M'Call Maxwell.
34½	6½	8½	Do. . . .	Alex. R. Alston.
34½	7	6	Do. . . .	Ford G. Barclay.
♀ 34½	5½	8½	Do. . . .	R. McD. Hawker.
♀ 34½	5½	13	Do. . . .	T. W. H. Clarke.
34½	6½	8½	Do. . . .	E. Lee Townshend.
34½	5½	8	Do. . . .	Sir H. D. Tichborne, Bart.
-34½	6	10½	Do. . . .	Count Scheibler.
-34½	8½	11½	Do. . . .	T. W. H. Clarke.
-34½	7½	10½	S.E. Somaliland . .	S. Payne-Gallwey.
- ♀ 34½	5½	7½	Burgo . . .	P. H. G. Powell-Cotton.
34	6½	7½	Somaliland . . .	E. N. Buxton.
34	5	9	Do. . . .	Lord Wolverton.
- ♀ 34	6	11	Do. . . .	S. Payne-Gallwey.
- ♀ 34	5	10	Do. . . .	A. E. Pease.
-33½	6½	8	Do. . . .	Sir Edmund G. Loder, Bart.
33½	6	9	Do. . . .	Capt. C. S. Timins.
33½	6	9	Do. . . .	Digby Davies.

RECORDS OF BIG GAME

BEISA (*Oryx beisa*)—continued.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 33 $\frac{3}{4}$	4 $\frac{3}{4}$	8	Somaliland . . .	J. Arkcoll.
-33 $\frac{3}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Do.	A. E. Leatham.
33 $\frac{3}{4}$	6 $\frac{3}{4}$	9 $\frac{3}{4}$	Do.	A. H. Straker.
33 $\frac{3}{4}$	5 $\frac{3}{4}$	8 $\frac{1}{4}$	Do.	Major H. G. C. Swayne.
33 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{3}{4}$	Do.	Col. Arthur Paget.
33 $\frac{3}{4}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	G. M. Norrie.
-33 $\frac{3}{4}$	6 $\frac{3}{8}$	8 $\frac{3}{8}$	Do.	Count E. Hoyos.
-♀ 33 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Do.	Capt. M. M'Neill.
-33 $\frac{1}{2}$	...	...	Do.	J. Menges.
33 $\frac{3}{8}$	4 $\frac{7}{8}$	7 $\frac{3}{8}$	Do.	W. D. James.
33 $\frac{1}{4}$	6 $\frac{1}{8}$	9	Do.	Major C. C. Ellis.
-33 $\frac{1}{4}$	5 $\frac{3}{4}$	5 $\frac{3}{4}$	Do.	C. V. A. Peel.
33	6 $\frac{3}{8}$	7 $\frac{1}{4}$	Do.	Capt. B. L. Carew.
♀ 33	5	6 $\frac{3}{4}$	Do.	Capt. G. Campbell.
-33	...	...	Njemps, E. Africa . .	F. J. Jackson, C.B.
-33	7	11 $\frac{1}{4}$	Somaliland . . .	Lieut.-Col. J. W. H. Flanagan.
32 $\frac{3}{4}$	6 $\frac{3}{4}$	12 $\frac{1}{4}$	?	Lord Delamere.
32 $\frac{3}{4}$	7 $\frac{1}{2}$	8 $\frac{3}{8}$	Somaliland . . .	Capt. F. C. Quicke.
32 $\frac{3}{4}$	6 $\frac{1}{2}$	8 $\frac{1}{4}$	Do.	J. Byng-Paget.
32 $\frac{3}{4}$	6 $\frac{1}{2}$	11 $\frac{1}{4}$	Danakil	Viscount Edmond de Poncins.
♀ 32 $\frac{3}{8}$	5	8	Somaliland . . .	Capt. C. H. Villiers.
32 $\frac{1}{2}$	6	8	Do.	P. B. Vander-Byl.
32 $\frac{1}{2}$	6	7	Do.	Count J. de Bylands.
32 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	Do.	Major H. C. Morland.
-32 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Do.	W. W. Ashley.
32 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	Do.	A. Leslie Renton.
-32 $\frac{1}{2}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	Major G. Douglas.
32 $\frac{3}{8}$	6 $\frac{1}{4}$	6 $\frac{1}{4}$	Do.	Lord Delamere.
♀ 32 $\frac{3}{8}$	5 $\frac{1}{2}$	11	Do.	Julius Jeppe.
32 $\frac{1}{4}$	6 $\frac{1}{2}$	8 $\frac{1}{4}$	Do.	B. Vincent.
32 $\frac{1}{4}$	6 $\frac{1}{2}$	9	Do.	J. J. Richardson.
32	6 $\frac{3}{4}$	6	Do.	T. W. Greenfield.
♀ 32	5 $\frac{1}{2}$	6	Do.	E. T. Marshall.
32	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Do.	G. H. Cheetham.
-31 $\frac{1}{2}$	4 $\frac{7}{8}$	11 $\frac{1}{4}$	Do.	Dr. Percy Rendall.
31 $\frac{1}{4}$	5 $\frac{3}{8}$	8 $\frac{1}{2}$	East Central Africa .	A. H. Neumann.
♀ 31	5 $\frac{1}{4}$	7	Somaliland . . .	Major W. L. H. Paget.
31	5 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	B. R. M. Glossop.

Head of Fringe-eared Beisa.

FRINGE-EARED BEISA (*Oryx callotis*).

Distinguished from the ordinary beisa by the fringe of long hairs surmounting the ears, by the extension of the eye-stripe to the lower jaw, along which it runs to join the throat-stripe, by the absence of any black on the front of the legs below the knees, and by the rich fawn of the ground-colour of the upper part of the face. Height at shoulder, 48 inches.

Distribution.—East Africa, from Kilimanjaro and the Galla country to Masailand and the adjacent territory, probably not so far north as the Athi plains. Although considered a distinct species, it might perhaps be better to regard this animal as a well-marked local race of the ordinary beisa. It is generally found in bush-covered country, either singly or in small herds, and is of a remarkably shy disposition. The Swahili name is cheroa.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
32	...	...	Athi River . . .	R. Cator.
30½	5½	10½	East Africa . . .	F. J. Jackson, C.B.
30½	.	6	Sabaki River District .	T. W. Greenfield.
30	.	10	East Africa . . .	Sir John Willoughby, Bart.
29½	5½	7½	Do. . . .	Sir Robert Harvey, Bart.
29	6	6½	Masailand . . .	Lieut.-Col. Hon. W. Coke.
29	5½	11½	Do. . . .	Sir Edmund G. Loder, Bart.
28½	5½	6	Do. . . .	H. C. V. Hunter.

FRINGE-EARED BEISA (*Oryx callotis*)—continued.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 28½	4¾	12¼	Masailand . . .	Henry Charrington.
27¾	6½	10¼	Do. . . .	F. J. Jackson, C.B.
27½	6⅞	8½	Do. . . .	Sir Robert Harvey, Bart.
27	6	9	Do. . . .	E. Gedge.
27	7½	7¾	Do. . . .	H. C. V. Hunter.
26¾	7	9	Do. . . .	J. Gardiner Muir.
♀ 26¾	5½	10	Do. . . .	Capt. R. A. J. Montgomerie, C.B., R.N.
26½	7	13	Do. . . .	Sir Robert Harvey, Bart.
26½	6½	9¼	Do. . . .	C. Steuart Betton.
-24	7	8½	Do. . . .	Count Scheibler.
21	6¾	10	Do. . . .	British Museum.

BEATRIX ORYX (*Oryx beatrix*).

This oryx is a much smaller animal than the beisa, measuring about 2 feet 8 inches at the shoulder, and is of a whitish colour, with a dark spot on the face, and a large dark patch on each cheek, which meets its fellow beneath the throat; the knees and the front of the lower portion of the legs being blackish brown, and the tail-tuft black.

Distribution.—The interior of Arabia, especially the Nejd districts and the confines of the great desert south of Orman, and, it is said, the Bushire district at the head of the Persian Gulf. This antelope has very rarely been killed by British sportsmen.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-26½	4¾	10¼	Arabia . . .	Paris Museum.
23¾	5	9¼	Do. . . .	Sir Edmund G. Loder, Bart.
♀ 15	3¾	4½	Head of Persian Gulf .	B. T. Finch, British Museum.

Head of White Oryx.

WHITE ORYX (*Oryx leucoryx*).

A very distinct species of the genus, agreeing approximately in size with the beisa, but with long recurving scimitar-shaped horns and a generally whitish coloration, showing a more or less distinct chestnut tinge. The chestnut shows itself chiefly on the neck, shoulders, under parts, and upper portions of the limbs; and in addition to this there are six brownish patches or streaks on the face, two of which are situated in the middle line, while two form eye-stripes, the other pair being between the horns and the eyes.

Distribution.—North-Western Central Africa, from Sennar and Kordofan to parts of Nubia and the Sudan. Rare in collections and menageries.

Length on front.	Circumference.	Tip to Tip.	Locality	Owner.
39½	4½	14½	?	British Museum.
¹ 39	5½		N. of Sokoto . . .	Capt. P. S. Wilkinson.
37½	5½	7½	?	British Museum.
35½	5½	11½	?	J. Carr Saunders.
35	5½	12	?	Sir Edmund G. Loder, Bart.
33½	5½	8	?	Hon. Walter Rothschild.
33½	5	8½	?	Duke of Bedford.
24½	4½	8½	?	Sir Edmund G. Loder, Bart.

¹ Single horn.

Skull and Horns of mounted specimen of Addax presented to
the British Museum by J. J. S. Whitaker.

ADDAX (*Addax nasomaculatus*).

This antelope is another member of the oryx group, but is referred to a genus apart, of which it is the sole representative. Its most distinctive features are the spirally twisted and closely ringed horns, which recall those of the Indian blackbuck, and the heavy mass of long hair clothing the neck and shoulders and forming a forelock on the forehead. The general colour is yellowish white in summer and grayish in winter, but the head, neck, and mane are brown, although a streak across the face below the eyes, the lips, and a spot on the outer surface of each ear are white. Hoofs very wide and shallow, almost like those of the reindeer. Height at shoulder about 3 feet 6 inches.

Distribution.—North Africa and Arabia.

ADDAX (*Addax nasomaculatus*)—*continued*.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
38½	30½	6½	12½	South Tunisia . .	J. J. S. Whitaker, British Museum. (See illustration.)
37½	31½	5½	23½	Sahara . . .	W. Barry.
35½	28	6½	13½	North Africa . .	Hon. Walter Rothschild.
35	29	6½	14	Do. . .	W. Barry.
34½	27	6½	17½	South Tunisia . .	J. J. S. Whitaker.
-34½	27½	6½	17	Do. . .	A. E. Pease.
33½	28½	5½	22	Do. . .	Sir Edmund G. Loder, Bart.
33½	27½	6½	17½	Do. . .	J. J. S. Whitaker.
33½	26	5½	12½	Do. . .	Hon. R. A. Ward.
32½	26½	6½	13½	Do. . .	Rowland Ward.
31½	26½	6½	17½	Do. . .	F. H. Barber.
31	25½	5½	13	Do. . .	J. H. Thomas.
-31	28	...	...	Do. . .	Sir H. H. Johnston, K.C.B.
♀ 30½	27½	4½	17½	South Algeria . .	Hon. Walter Rothschild.
-♀ 30½	27½	..	..	South Tunisia . .	Sir H. H. Johnston, K.C.B.
29½	24½	6½	14	Sahara . . .	Hon. Walter Rothschild.
29½	25½	5½	19½	South Algeria . .	Julius Jeppe.
28½	24½	5½	12½	Do. . .	British Museum.

Skull of Male Nilgai.

NILGAI (*Boselaphus tragocamelus*).

This somewhat ungainly and decidedly small-horned antelope is the single Oriental representative of an important group whose other members are African. Most are of large size, and, with the exception of the elands, lack horns in the females. In the males the horns are angulated in front and generally spirally twisted, but in no case ridged. There are small face-glands, the muzzle is naked, and the tail is long and tufted. Except in the nilgai, the cheek-teeth have short and broad crowns.

From the other members of the group the nilgai is readily distinguished by its short, upright horns, which, although angulated in front, show no distinct spiral twist. With a long and pointed head, this antelope has the fore-legs considerably longer than the hinder pair; and it is chiefly to this peculiarity that its ungainly appearance is due. Both sexes have a mane on the neck, but the bulls alone possess a tuft of long hair on the middle of the throat. The general colour of the adult bull is dark gray, tinged with blue or brown; but the mane and tufts of long hair are black, and streaks and patches on the face, ears, and throat, as well as the under parts, the lower surface

of the tail, and a ring above and below each fetlock, are white. Height at shoulder from 4 feet 4 inches to 4 feet 8 inches. Mr. A. O. Hume shot a specimen in the Aligurh district in 1855 whose horns measured $11\frac{3}{4}$ along the front curve, and had a circumference of 9.5. They were unfortunately destroyed in the Mutiny.

Distribution.—The peninsula of India, from the foot of the Himalaya to the south of Mysore; common in parts of the Eastern Punjab, the North-West Provinces, Guzerat, and the Central Provinces.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$9\frac{1}{2}$	$7\frac{3}{4}$	$5\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
$9\frac{1}{2}$	$7\frac{1}{2}$	$6\frac{1}{4}$	?	J. Whitaker.
$-9\frac{1}{2}$	$8\frac{1}{2}$	...	Bhurtpur	Capt. E. R. Gordon.
$9\frac{1}{4}$	$6\frac{3}{4}$	$4\frac{7}{8}$	?	British Museum.
9	7	9	?	J. Whitaker.
9	$6\frac{5}{8}$	$3\frac{1}{2}$	?	A. O. Hume, C.B.
$8\frac{7}{8}$	$6\frac{1}{2}$	$5\frac{1}{4}$	Central Provinces	C. D. Twopeny.
$8\frac{3}{4}$	$6\frac{1}{4}$	$5\frac{3}{4}$	Bhurtpur	Major J. M. Fawcett.
$-8\frac{3}{4}$	...	...	Jumna Valley	Indian Museum.
$8\frac{1}{2}$	$7\frac{1}{2}$	$4\frac{3}{4}$	Central Provinces	Capt. E. H. R. Hibbert.
$8\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{1}{4}$	Do.	Marquis of Dufferin and Ava.
$-8\frac{1}{2}$	$6\frac{1}{2}$	6	Do.	Dublin Museum.
$8\frac{1}{2}$	$7\frac{1}{2}$	$5\frac{1}{4}$	Do.	Dr. W. P. Y. Bainbrigge.
$-8\frac{1}{2}$	6	$5\frac{1}{2}$	Do.	Count J. Potocki.
$-8\frac{3}{8}$	$7\frac{3}{4}$	$6\frac{1}{2}$	Do.	Dr. Percy Rendall.
$8\frac{1}{4}$	$7\frac{1}{8}$	$7\frac{3}{4}$	North India	Sir Victor Brooke's Collection.
-8.25	7.80	6.70	Ulwar	Viscount Edmond de Poncins.
$8\frac{1}{4}$	...	...	Kathiawar	Lieut.-Col. L. L. Fenton.
$-8\frac{1}{4}$	...	...	Kota	H.H. Maharaja of Bikanir.
$8\frac{1}{8}$	$6\frac{1}{8}$	5	?	Hume Collection, British Museum.
8	$6\frac{3}{4}$	$6\frac{1}{4}$	Nimar, Cent. Prov.	Lieut.-Col. H. Wade-Dalton.
$7\frac{3}{4}$	$7\frac{1}{2}$	$5\frac{3}{4}$	?	H. G. Buxton.
$7\frac{3}{4}$	7	6	Central Provinces	Major A. Colville.
$7\frac{1}{8}$	6	$7\frac{1}{4}$	?	L. M. Le Champion.

Head of Bushbuck shot by A. M. Naylor.

BUSHBUCK (*Tragelaphus scriptus*).

<i>Assali</i> , Danakil name.	<i>Inkonka</i> (male), <i>Imbabala</i> (female)
<i>Bawala</i> in the Chilala and Chibisa countries.	of the Zulus.
<i>Boschbok</i> of the Dutch.	<i>M'babala</i> in the Barotse country.
<i>Dol</i> of the Somalis.	<i>M'babala</i> and <i>Serolo buchuhu</i> in the Lake Ngami country.
<i>Ibawara</i> of the Lower Zambesi natives.	<i>Mbawara</i> of the Swahilis.
<i>Imbabala</i> of the Swazis and Matonga.	<i>Scrolobutuku</i> of the Bamangwatos.
	<i>Ungurungu</i> of the Makubas.

The bushbucks and harnessed antelopes form an extensive group of species nearly allied to the kudus, but usually displaying great sexual differences in the colour of the coat, and generally having a simpler spiral to the horns. The females are nearly always striped with white on a chestnut ground, but the bucks may be darker and more uniformly coloured. As in the kudu, the females are hornless. The true or lesser bushbuck is the smallest and at the same time the most widely spread member of the group, having several local races. The height at the shoulder ranges from $2\frac{1}{2}$ to 3 feet, and the weight from 100 lbs. to 170 lbs. In the Abyssinian bushbuck (*T. scriptus decula*), which ranges

into the dense forests bordering the Webbe River in Somaliland, and is locally known as *dol*, the build is low and stout, and the general colour yellowish, the light stripes being nearly obsolete. In the West African bushbuck (*T. scriptus typicus*), from West, Central, and South-Central Africa, the ground-colour is bright rufous, and the spots and stripes are very conspicuous. On the other hand, in the East African race (*T. scriptus roualeyni*) the bucks are dark brown, with only faint indications of white markings. Finally, in the Cape bushbuck (*T. scriptus sylvaticus*) the colour is dark brown without transverse white stripes, and the spots reduced to a few indistinct ones on the haunches.

In the southern districts of Cape Colony bushbuck are still to be found in abundance, even in the neighbourhood of large towns like Port Elizabeth. Recourse is, however, had to preserving for the greater part of the year, by which means the well-known Easter Hunts, when driving is practised and large bags are made, are still kept up. In more inland districts either the does or both sexes are periodically protected. A wounded bushbuck will often make a desperate and dangerous charge.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-19 $\frac{7}{8}$	5 $\frac{1}{2}$	11	Lower Zambesia . . .	Surgeon W. H. S. Stalkartt, R.N.
17 $\frac{7}{8}$	6 $\frac{1}{2}$	5 $\frac{7}{8}$	East Africa . . .	Sir John Kirk, K.C.B.
-17 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{7}{8}$	Mount Zomba, B.C.A. . .	D. MacAlpine.
17 $\frac{1}{2}$	6	5 $\frac{1}{2}$	N.E. Gazaland . . .	A. M. Naylor. (See illustration.)
17	5 $\frac{1}{2}$	8 $\frac{1}{8}$	Mount Zomba, B.C.A. . .	C. C. Bowring.
16 $\frac{7}{8}$	5 $\frac{7}{8}$	6 $\frac{1}{2}$	Manda Island, B.E.A. . .	British Museum.
16 $\frac{1}{2}$	5 $\frac{3}{4}$	(one horn)	Pungwe . . .	Col. G. A. Percy.
-16 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	?	Julius Jeppe.
-16 $\frac{1}{2}$	...	...	South Africa . . .	A. Bowker, Grahamstown Museum.
-16 $\frac{1}{2}$	...	...	?	O. R. Dunell.
-16 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	Natal . . .	General A. W. Drayson.
-16	6 $\frac{1}{2}$	...	Kalamba Hills . . .	F. Vaughan Kirby.
15 $\frac{3}{4}$	6	5 $\frac{7}{8}$	Okavango River . . .	Major H. J. Gould-Adams, C.B., C.M.G.
15 $\frac{3}{4}$	6	8 $\frac{1}{8}$	Zululand . . .	A. H. Neumann.
15 $\frac{3}{4}$	5	3 $\frac{3}{4}$	Do. . .	Capt. L. O. Williams.
-15 $\frac{3}{4}$	...	...	South Africa . . .	F. H. Barber.
15 $\frac{7}{8}$	5 $\frac{1}{2}$	3	British East Africa . . .	G. E. Smith.

BUSHBUCK (*Tragelaphus scriptus*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15½	5½	5	Pungwe	Hon. T. Thynne.
15½	5½	3½	Transvaal	C. F. Eustace.
15½	5½	4½	South Africa	F. C. Selous.
-15½	...	...	Do.	H. T. and A. H. Glynn.
15½	6½	7½	Do.	Major-General Sir Arthur Ellis, K.C.V.O.
15½	5½	7½	Zululand	Hon. Charles Ellis.
15½	6	6½	Pungwe	H. R. Holden.
-15½	7½	6½	Nyasaland	Alex. R. Alston.
15½	5½	8½	?	Mr. Justice Hopley.
14½	5½	6½	Shiré River, B.C.A. . . .	H. H. Williams.
14½	5½	6½	Zululand	Lieut.-Col. Hon. W. Coke.
14½	5	6½	South Africa	R. A. Cooper.
-14½	5½	3½	Nyasaland	Alex. R. Alston.
14½	5½	2½	Matabeleland	G. H. M. Banks.
14½	5½	7	Zambesia	G. Richards.
-14½	...	...	Cape Colony	F. H. Barber.
-14½	...	...	Transvaal	C. T. Jones.
-14½	5	7	Pungwe	Julius Jeppe.
14	...	...	East Africa	F. J. Jackson, C.B.
14	5½	5½	Matabeleland	H. and C. Beddington.
14	5½	6½	South Africa	C. D. Rudd.
14	5½	10½	Pungwe	G. Micklethwait.
14	5½	7	Ngamiland	Capt. E. J. Lugard.
-14	6	7½	South Africa	James J. Harrison.
13½	5½	5½	Do.	H.R.H. the Duke of Saxe-Coburg and Gotha.
13½	5½	6½	Do.	Hon. Walter Rothschild.
13½	5½	5½	Do.	Sir Edmund G. Loder, Bart.
-13½	6½	6	Natal	T. E. Buckley.
13½	5½	5½	East Africa	H. C. V. Hunter.
13½	5½	4½	?	Sir Victor Brooke's Collection.

BUSHBUCK (*Tragelaphus scriptus*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
13½	5½	7	South Africa . . .	F. C. Selous.
13½	5½	5½	Do. . . .	British Museum.
13½	5½	4½	Do. . . .	Sir John Willoughby, Bart.
-13½	5½	7½	North of Pungwe . . .	Count E. Hoyos.
-13½	...	...	Cape Colony . . .	C. T. Jones.
13	6½	5½	East Africa . . .	F. J. Jackson, C.B.
13	5½	7	Benguela . . .	G. W. Penrice.
13	5½	5	Pungwe . . .	G. L. Bonham.
13	5½	5½	British Central Africa . . .	J. E. Gough.
-13	...	...	Zambesia . . .	C. T. Jones.
12½	5	4½	South Africa . . .	A. E. Capell.
-12½	5½	8½	Barberton . . .	Dr. Percy Rendall.
12½	4½	5½	?	Dr. W. P. Y. Bainbrigge.
12½	5½	4½	Chobe Valley . . .	F. C. Selous, British Museum.
12½	6½	7½	South Africa . . .	E. G. Christian.
-12½	5	5½	Matabeleland . . .	J. Brander Dunbar.
11½	5½	4½	Pungwe . . .	Hon. T. Thynne.
11½	5½	4½	Uganda . . .	The late Capt. Speke, British Museum.
11½	5	6½	East Africa . . .	Sir Robert Harvey, Bart.
-11½	...	...	Adda Bush . . .	Cape Town Museum.
10½	4½	5	Nigeria . . .	Major A. J. Arnold, D.S.O.
10½	4½	2½	Gambia . . .	A late Earl of Derby, British Museum.
-9½	4½	6½	Songwe, Nyasaland . . .	John Yule.

Head of Abyssinian Bushbuck shot in the Webbe Shebayle River District, Somaliland,
by Major H. G. C. Swayne.

The following specimens belong to the Abyssinian race (*T. scriptus decula*); the body measurements being those of one shot by Viscount Edmond de Poncins on the Hawash River, 1898:—

From nose to root of tail	48 $\frac{3}{8}$ ins.
Tail (hair included)	10 $\frac{3}{4}$ "
Height at withers	26 $\frac{3}{4}$ "
Round the body	30 $\frac{3}{8}$ "

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-17	.	.	Somaliland	Major H. G. C. Swayne.
-16 $\frac{1}{2}$	6 $\frac{1}{2}$	5	Do.	A. H. Straker.
16	6	7 $\frac{1}{2}$	Do.	Major H. G. Swayne.
14 $\frac{1}{2}$	6 $\frac{1}{2}$	5	Do.	A. H. Straker.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Harar, Abyssinia	Prince de Lucinge.
-13	5 $\frac{1}{2}$	6 $\frac{1}{8}$	Do.	Do.
12 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	Near Hawash River, Abyssinia	Viscount Edmond de Poncins.
12 $\frac{1}{2}$	5	5 $\frac{1}{2}$	Abyssinia	W. D. James.
12	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	British Museum.
11	5 $\frac{1}{2}$	5	Settite River, Abyssinia	Col. Ralph Vivian.
11	4 $\frac{1}{2}$	2 $\frac{1}{2}$	Northern Abyssinia	British Museum.

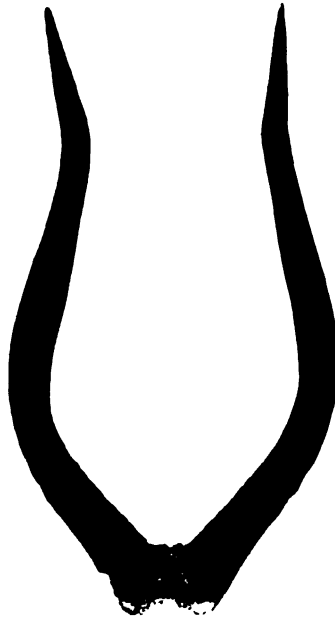
Horns of Male Bongo, from the type specimen in the British Museum.

BONGO or BROAD-HORNED ANTELOPE (*Tragelaphus euryceros*).

This West African species is the largest of the harnessed antelopes. In addition to its large size, it is characterised by the bright chestnut colour of the males, marked with a number of narrow transverse white stripes, the shortness of the hair, the absence of a throat-fringe, and the smooth and stout horns, of which the tips become yellow by wear. The markings on the face take the form of a pair of white spots below the eyes, and there is a white crescent on the breast. Height at the shoulder probably about 4 feet.

Distribution.—West Africa, from Liberia, through Fanti to the Ashkankolu Mountains and the Gaboon. It is doubtful if this rare and beautiful antelope has ever been killed by British sportsmen. The original specimens were obtained by P. Du Chaillu, and are in the British Museum.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
32 $\frac{3}{4}$	27 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{1}{2}$	Gaboon . . .	Sir Edmund G. Loder, Bart.
31 $\frac{1}{2}$	26 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{3}{4}$	West Africa . . .	Sir Victor Brooke's Collection.
30 $\frac{1}{2}$	24 $\frac{1}{2}$	10 $\frac{1}{4}$	12 $\frac{3}{4}$	Do.	Do.
30	24 $\frac{1}{2}$	9 $\frac{3}{4}$	11 $\frac{1}{2}$	Ashkankolu Mountains	British Museum.
29 $\frac{1}{2}$	25 $\frac{1}{4}$	9 $\frac{3}{4}$	10 $\frac{3}{4}$	Gaboon	P. Du Chaillu, British Museum.
27 $\frac{1}{2}$	23 $\frac{1}{2}$	10 $\frac{1}{4}$	10 $\frac{3}{4}$	Fanti	Do.



Horns of Nyala, from a specimen in the possession of F. H. Barber.

NYALA (*Tragelaphus angasi*).

The next African representative of the larger harnessed antelopes is a smaller and more delicately built animal than the bongo, standing about 3 feet 6 inches at the shoulder. Weight about 250 lbs. to 300 lbs. In both sexes the hair is very long and coarse, but in the male its colour is dark grayish brown with a small number of indistinct white stripes, while in the female it is bright reddish chestnut with clearly defined stripes. The males have a fringe of long hair on the neck and the under parts of the body, their horns being much rougher than those of the bongo. As in the latter, the hoofs are short.

Distribution.—South-East Africa, including Zululand, Delagoa Bay, and Nyasaland; on the West Coast it has been reported from Angola, although this form may indicate a distinct local race.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
31½	24½	8½	3½	Shiré River, B. C. A.	Fergus MacLagan.
-29¾	24	...	11½	?	F. J. Newnham.
-29½	...	...	...	Delagoa Bay . .	F. H. Barber. (See illustration.)

NYALA (*Tragelaphus angasi*)—continued.

On front curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight.					
-29½	...	...	...	?		O. R. Dunell.
28½	23½	8	12½	Zululand		Hon. Walter Rothschild.
-28½	...	...	...	?		W. Russell Bowker.
-28½	...	...	...	Delagoa Bay		F. H. Barber.
-28½	...	...	...	Do.		Prince Boris Czetwertynski.
28	24	8	15	Katanga, B.C.A.		John Yule.
28	23	7½	13½	Near Chiromo, B.C.A.		Staff-Surgeon J. Dowson, R.N.
28	...	8½	10½	South Africa		British Museum.
-28	24½	7½	11½	Delagoa Bay		C. T. Jones.
-28	23½	8	11	?		Dr. W. P. Y. Bainbrigge.
27½	22½	7½	9½	South Africa		Sir Victor Brooke's Collection.
27½	23	7½	8½	Do.		Earl of Dunmore.
-27½	23	8½	13	Do.		E. D. Scott.
27½	22½	7½	8½	?		C. D. Rudd.
27½	23½	7½	15½	Delagoa Bay		Major H. J. Gool-Adams, C.B., C.M.G.
27½	...	8½	10½	South Africa		Sir Edmund G. Loder, Bart.
-27½	...	7½	10½	?		Julius Jeppe.
-27½	23½	...	14	Delagoa Bay		H. T. and A. H. Glynn.
27	...	8	9½	Shiré River, B.C.A.		F. Vaughan Kirby.
27	22½	7½	11½	?		J. R. Buckler.
26½	22½	7½	11	?		F. E. Potter.
26½	22½	7	11½	Amatongaland		H. A. Bryden.
26½	22	7½	7	Delagoa Bay		Frank Harris.
-26½	22½	7½	6½	Do.		Dr. Percy Rendall.
26½	22	6½	11½	Do.		F. C. Selous.
26	...	7½	8½	Zululand		Hon. Charles Ellis.
25	21	8	9½	?		Capt. A. M'Lean Wait.
-25	22½	8	12½	?		A. Ohlsson.
24½	20½	...	...	Amatongaland		Cape Town Museum.
23½	20	7½	11½	Zululand		Durban Museum.
23½	20½	7½	7½	Do.		G. Richards.
23½	19	6½	7	Do.		A. H. Neumann.
23	...	7	5½	Do.		British Museum.
-22½	19½	7	9½	Delagoa Bay		Count E. Hoyos.
-22	...	...	...	St. Lucia Bay		G. F. Angas.
21	19	9	...	Do.		Lieut.-Col. Hon. W. Coke.

Horns of West African Harnessed Antelope, from the Gambia.

WEST AFRICAN HARNESSED ANTELOPE (*Tragelaphus gratus*).

Together with its near ally the situtunga, this species differs from all the other members of the group by the extreme elongation of the hoofs, which are thus adapted for supporting the weight of the body on the spongy soil of the marshes in which these antelopes dwell. The lateral hoofs, too, are much more developed than in other harnessed antelopes. The general coloration of the West African species is very similar to that of the nyala, the ground-colour of the coat of the male being olive, and that of the female bright rufous, marked in both sexes with white stripes on the body and spots on the face. There is, however, no fringe of long hair on the throat. Height

at shoulder about 3 feet 7 inches. Both in this species and the situtunga the horns of the males are longer and more twisted than in the other members of the genus, and thus come very close to those of the kudu. In the situtunga the coloration of the adult is uniform grayish brown. The West African species ranges from the Congo to the Gaboon and Cameroon districts. It has but seldom been collected by sportsmen, so that very little is known of its habits in the wild state. Several specimens have been bred in captivity at the Zoological Gardens, Amsterdam.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
30	26½	7½	14½	?	Rowland Ward.
29½	24½	8½	14	Gaboon . . .	Sir Edmund G. Loder, Bart.
28½	23	8	8	Gambia . . .	Rowland Ward. (See illustration.)
25½	21½	6½	12½	Do. . . .	Guy H. Sangster.
25½	22	8	...	French Congo . . .	Hon. Walter Rothschild.
-24½	21½	7½	6½	West Africa . . .	Dr. Percy Rendall.
-23½	20½	8½	9½	Do. . . .	Do.
...	19	...	...	Gaboon . . .	British Museum.
23½	18	7½	11½	Do. . . .	Sir Victor Brooke's Collection.
23	20½	6½	9½	West Africa . . .	Hon. Walter Rothschild.
22½	19½	7	10½	Nigeria . . .	J. A. Burdon.
22½	19½	7	11½	Gambia . . .	Rowland Ward.
-21.5	...	7.8	...	?	Berlin Museum.
-17	14½	6½	...	Ogooné . . .	Paris Museum.

Frontlet and Horns of Situtunga, from John Yule's specimen.

SITUTUNGA (*Tragelaphus spekei*).

<i>Situtunga</i> in the Barotse country.	<i>Situtunga</i> , <i>Puvula</i> , <i>Unzuzu</i> of the
<i>Zowè</i> in the Chilala and Chibisa	tribes on the Chobe and Central
countries.	Zambesi.
<i>Nakong</i> of the Batauwani at Lake	<i>N'zoé</i> of the natives of Lakanga
Ngami.	River north of the Zambesi.

This species, also known as the nakong, has the same habits and make as the West African harnessed antelope, from which it differs by its uniformly grayish-brown colour ; the young alone being faintly barred and spotted. Another peculiarity is to be found in the length and

silkiness of the hair. The horns, which are nearly smooth and strongly keeled, form nearly two complete turns, and thus approximate to those of the kudu.

Distribution.—The situtunga is an inhabitant of the dense reed-swamps bordering the rivers of Central, South-Central and East Africa ; and is semi-aquatic in its habits, frequently burying itself up to the eyes in the water. Consequently it is one of the most difficult of all antelopes to kill ; and has even baffled the energy of Mr. Selous. By firing the reed-beds in the dry season, the natives are able to spear the situtunga as they cross open water. At night these antelopes leave the reed-brakes for the islands in the rivers, but before dawn return to their impenetrable covert. Mr. A. B. Phipps, in a letter dated October 1895, states that they have become very rare in the swamps bordering the Okavango River, owing to that river having changed its course and ceased to flow into the Botletli. Consequently they go down to the latter for water, and are shot. A few are found on a bush-clad rocky island far out in the Victoria Nyanza ; in which neighbourhood the species was first discovered by the late Captain Speke.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
35	28	7½	15½	South end of Lake Tanganyika	John Yule. (See illustration.)
-33½	27½	7½	19	?	Julius Jeppe.
33½	26½	8	16½	Okavango Valley	Major H. J. Goold-Adams, C.B., C.M.G.
-33	...	...	...	?	Alfred Ebdon.
32½	27	7½	16½	Chobe Valley	F. C. Selous.
-32½	...	...	...	?	C. T. Jones.
31½	25½	8½	17½	Near Linyanti	F. C. Selous.
31½	24½	7	16½	Chobe Valley	F. C. Selous, British Museum.
-31½	25½	7½	13½	Bangweolo	F. Smitheman.
-31½	25½	7½	14½	Congoland	S. de Brazza, Paris Museum.
31	23½	8	9½	?	G. Richards.
-30½	...	...	...	?	O. R. Dunell.
-30½	23½	8½	15½	?	Julius Jeppe.
-30	25	7½	18	?	Mr. Justice Hopley.
29½	25	8½	17	?	R. A. Cooper.

SITUTUNGA (*Tragelaphus spekei*)—*continued.*

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
-29½	26	7¾	16	?	A. Ohlsson.
-28¾	26¼	7⅝	14⅞	Lake Mweru, B.C.A.	R. H. Ferrers Stranack.
27½	23½	7½	10	B.C.A. . . .	Rowland Ward.
27¼	21½	8	6	Barotseland . . .	H. Timmins.
27½	22⅝	7⅝	14⅞	Lake Mweru, B.C.A.	Rowland Ward.
26¾	21¾	7¼	11⅝	?	W. Van Ness.
26½	21¾	7½	17	Chobe Valley . . .	Frank Harris.
26	22⅝	7	17½	?	Sir Victor Brooke's Collection.
...	25	...	...	Okavango Valley . . .	A. B. Phipps.
25⅞	22¼	7¼	19⅝	Chobe Valley . . .	F. C. Selous, British Museum.
25½	21¾	7	13⅝	Bangweolo . . .	F. Smitheman.
25	21	8	16¼	Botletli Valley . . .	Hon. Walter Rothschild.
24	20	7½	11¼	Barotseland . . .	E. D. Scott.
23⅝	...	7¼	10	?	Major H. J. Goold-Adams, C.B., C.M.G.
23	20¼	...	5⅞	?	F. H. Barber.
22¾	19½	10	7½	?	Hon. Walter Rothschild.
20¼	18¼	6¼	10	Benguela . . .	G. W. Penrice.
20¼	17¼	6¼	5	Do. . . .	Do.
19⅝	16⅞	6⅝	9¼	Barotseland . . .	R. T. Coryndon.
-17¼	...	5¾	7	Victoria Nyanza . . .	E. Gedge.
15⅝	14½	5⅝	8¾	Do. . . .	Hon. Walter Rothschild.

Head of Male Greater Kudu.

GREATER KUDU (*Strepsiceros kudu*).

<i>Eebala-bala</i> of the Amandebele.	<i>Ngoma</i> in the Chilala and Chibisa countries.
<i>Ee-zilarwa</i> of the Makalakas.	
<i>Dwar</i> of the Masaras.	<i>Noro</i> of the Mashonas.
<i>Godir</i> of the Somalis.	<i>Tolo</i> of the Bechuanas.
<i>Itolo</i> of the Basutos.	<i>Tolo</i> in the Barotse and Lake Ngami countries.
<i>Itshongonons</i> of the Swazis.	
<i>Muzeelona</i> of the Batongas.	<i>Unza</i> of the Mazubias.
	<i>Unzwa</i> of the Makubas.

A male shot by Dr. Percy Rendall, in Nyasaland, measured :

	inches.		inches.
Nose to tail . . .	91 $\frac{1}{2}$	Girth of barrel . . .	72
Height at shoulder . . .	55	„ before hips . . .	54
Point of shoulder to nose . . .	32	„ of fore-leg . . .	14 $\frac{3}{4}$
Length of tail . . .	17 $\frac{1}{2}$	„ „ thigh . . .	19 $\frac{1}{2}$
Girth of neck (min.) . . .	30	„ „ neck (max.) . . .	43

Although rather less brilliantly coloured than some of the harnessed antelopes, the kudus are among the handsomest of all antelopes, their spiral horns, striped coat, and noble carriage rendering them really magnificent creatures. Their chief difference from the bushbucks is to be found in the fuller spiral formed by the horns: both sexes being nearly similar in colour. The special characteristics of the greater or true kudu are the large size (height at shoulder reaching to 4 feet 10 inches or 5 feet), the presence of a thick fringe of long hair on the throat, and the open spiral of the horns of the bull. The colour is too well known to require description.

Distribution.—The kudu, in suitable localities, ranges over the greater part of Africa south of the Sahara, extending from Abyssinia and Somaliland through East and Central Africa to the Cape, and westward across the continent to Angola, where the Congo apparently forms its northern limits. In spite of its bulk, it is an adept at concealment; and this trait, coupled with its general wariness and acute sense of smell and hearing, has largely contributed to its survival in districts where it is much hunted. Except in the Uitenhage jungles, where it is preserved by English farmers, the kudu has, however, been exterminated from Cape Colony. In Eastern Mashonaland it is still abundant, as it is in the highlands of Somaliland, in which country it is rarely met with on the plains.

Although an adept at getting across rocky hills, this animal is by no means a good performer on the flat (where it seldom allows itself to be surprised), and can be ridden down without much difficulty by a fairly well-mounted hunter.

Horned females occur very rarely ; but three specimens with horns are recorded on p. 302.

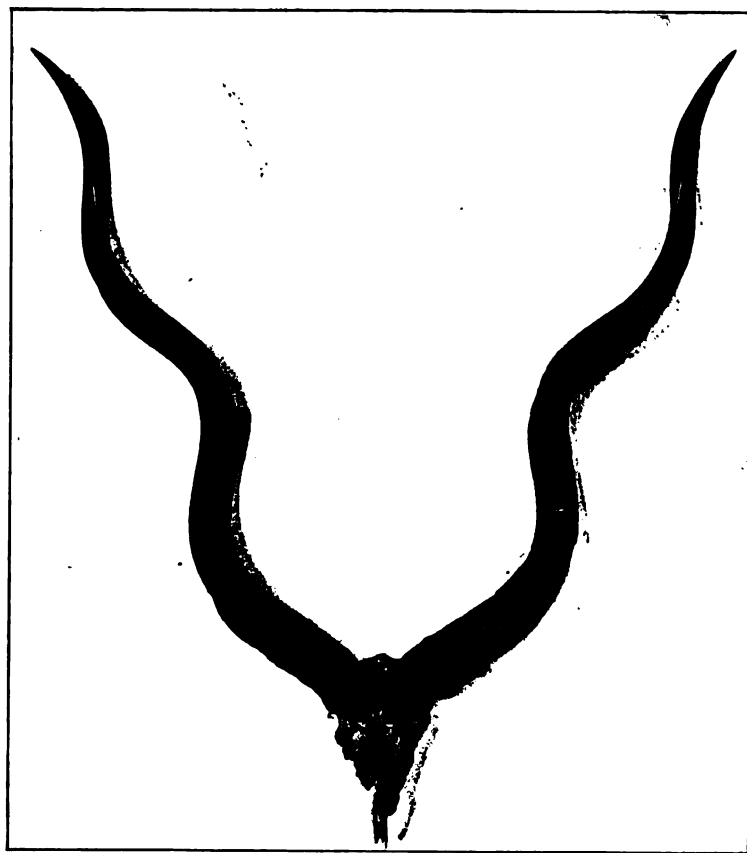
Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
...	48 $\frac{7}{8}$	...	...	Ngamiland . . .	F. H. Barber. (See illustration.)
63	48 $\frac{1}{2}$	12 $\frac{1}{2}$	49	Macloutsie River . .	E. W. Tompson.
-63	44 $\frac{1}{2}$	...	42 $\frac{3}{4}$	Nr. Tete, Zambesi . .	Major P. W. Forbes.
-63	39	10 $\frac{1}{2}$	12	?	Mr. Justice Hopley.
...	45 $\frac{1}{2}$	...	...	Delagoa Bay . . .	F. H. Barber.
61 $\frac{1}{2}$	45 $\frac{1}{2}$	...	...	South Africa . . .	O. R. Dunell.
60 $\frac{3}{4}$	44 $\frac{1}{2}$	12	29	Do. . . .	Frank Harris.
60 $\frac{3}{8}$	45 $\frac{3}{8}$	11 $\frac{1}{2}$	33	Macloutsie River . .	F. C. Selous.
-60 $\frac{3}{8}$	44	...	31	South Africa . . .	H. T. and A. H. Glynn.
-60 $\frac{1}{2}$	47	10 $\frac{1}{2}$	44 $\frac{3}{4}$	Do. . . .	A. Ohlsson.
-60	39	10	7 $\frac{8}{8}$	Lebombo Mountains .	F. Vaughan Kirby.
-59 $\frac{3}{4}$	45 $\frac{1}{4}$	...	39 $\frac{3}{8}$	Pungwe Valley . . .	Major A. St. H. Gibbons.
59 $\frac{1}{4}$	42 $\frac{1}{4}$	11 $\frac{5}{8}$	19	?	G. Richards.
-58 $\frac{3}{4}$	46 $\frac{1}{2}$	11 $\frac{1}{2}$	41 $\frac{3}{4}$	Transvaal . . .	F. Van Zeller.
-58 $\frac{1}{2}$	45	...	46	?	O. R. Dunell.
-58 $\frac{1}{2}$	45	11 $\frac{1}{2}$	44 $\frac{3}{4}$	?	Mr. Justice Hopley.
-58 $\frac{1}{4}$	46	10	39 $\frac{3}{4}$	South Africa . . .	Julius Jeppe.
58	46	11 $\frac{5}{8}$	39	S.E. Mashonaland . .	J. G. Millais.
-58	46	...	...	Zomba, B.C.A. . . .	D. MacAlpine.
58	43 $\frac{1}{2}$	10 $\frac{1}{4}$	32 $\frac{1}{2}$	Okavango River . . .	Major H. J. Goold-Adams, C.B., C.M.G.
-58	44	11	44	Lebombo Mountains .	F. Vaughan Kirby.
-58	41	...	...	South Africa . . .	Cape Town Museum.
57 $\frac{1}{2}$	41	11 $\frac{1}{8}$	21 $\frac{1}{2}$	N.E. Transvaal . . .	A. M. Naylor.
-57 $\frac{1}{2}$	39 $\frac{3}{4}$	11 $\frac{1}{8}$	15	South Africa . . .	Julius Jeppe.
-57 $\frac{3}{8}$	39	9 $\frac{5}{8}$	32	Somaliland . . .	J. Johnston-Stewart.
57 $\frac{1}{4}$	45 $\frac{3}{8}$	10 $\frac{3}{4}$	35	B. C. Africa . . .	H. C. Macdonald.

GREATER KUDU (*Strepsiceros kudu*)—continued.

On outside curve.	Length. Straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
57½	44½	11½	34½	South Africa . . .	Sir Edmund G. Loder, Bart.
57½	43	11½	34½	Mashonaland . . .	H. and C. Beddington.
57	43	14	32	South Africa . . .	A. Moseley.
57	42½	11	31	Do. . . .	Capt. M. D. Graham.
57	39½	9½	36½	Somaliland . . .	H. R. H. le Duc d'Orléans.
56½	43½	11½	26½	Matabeleland . . .	W. Van Ness.
56½	42½	10½	38½	?	Sir Victor Brooke's Collection.
56½	41½	10½	23½	Matabeleland . . .	Hon. C. Greville.
56½	38½	9½	28½	Somaliland . . .	J. Benett-Stanford.
-56½	35	10½	30	Do. . . .	Sir Edmund G. Loder, Bart.
56½	44½	11½	33½	South Africa . . .	Hon. Walter Rothschild.
56	43	10½	43	Mashonaland . . .	F. C. Selous.
56	44	10½	39	South Africa . . .	F. B. Dunsford.
55½	41	10½	36	Do. . . .	F. Struben.
55½	39½	10½	26½	Mashonaland . . .	A. Neilson.
55½	42½	11½	37	Matabeleland . . .	Lord Brackley.
55½	42½	10½	38	Do. . . .	Major James Grant.
55½	40½	11	27½	E. C. Africa . . .	H. S. H. Cavendish.
55	41½	11½	28	Matabeleland . . .	Major R. Hayes-Sadler.
55	40½	12½	32½	Zululand . . .	C. D. Rudd.
-55	41	10	41	?	The MacLaine of Lochbuie.
54½	39½	10½	27½	Upper Shiré, B.C.A. . .	C. C. Bowring.
54½	40½	11	21½	Mashonaland . . .	S. Chillingworth.
-54½	39	11	27½	South Africa . . .	Dublin Museum.
-54½	38½	11	26	Do. . . .	Durban Museum.
-54½	32½	...	...	N. Somaliland . . .	J. Menges.
54½	40½	10½	39½	Zululand . . .	C. H. Akroyd.
-54½	38½	10½	22½	Somaliland . . .	P. H. G. Powell-Cotton.
54	40	10½	32	Do. . . .	Captain C. S. Timins.

GREATER KUDU (*Strepsiceros kudu*)—continued.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
54	41	11	37½	?	Sir Edmund G. Loder, Bart.
54	42	10½	35½	Zululand . . .	A. Cameron.



Frontlet and Horns of Greater Kudu, from F. H. Barber's specimen.

54	42	11½	39½	Mashonaland . . .	Earl of Dunmore.
-54	40½	10½	31½	South Africa . . .	Dr. W. P. Y. Bainbrigge.
54	40	11½	24	Do. . . .	Lieut.-Col. W. Sitwell.
-54	39	10½	32	Somaliland . . .	Norman B. Smith.
-53½	41½	10½	32½	S.W. Somaliland . . .	C. V. A. Peel.

GREATER KUDU (*Strepsiceros kudu*)—*continued*.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
53 $\frac{1}{2}$	41	10	25	Mashonaland . . .	J. A. Jameson.
- 53 $\frac{1}{2}$	36 $\frac{1}{2}$	9 $\frac{1}{2}$	23 $\frac{1}{2}$	Somaliland . . .	J. Brander Dunbar.
53 $\frac{1}{2}$	39	10 $\frac{1}{2}$	31 $\frac{1}{2}$	Zululand . . .	Lieut.-Col. Hon. W. Coke.
- 53 $\frac{1}{2}$	40 $\frac{1}{2}$	11 $\frac{1}{2}$	40 $\frac{1}{2}$	Lebombo Mountains . .	Count E. Hoyos.
53 $\frac{1}{2}$	37	9 $\frac{1}{2}$	23	Somaliland . . .	E. Lort-Phillips.
53	41 $\frac{1}{2}$	10 $\frac{1}{2}$	28 $\frac{1}{2}$	South Africa . . .	W. Y. Campbell.
...	40.7	8.8	30.9	Bahr Setit . . .	Prince Henry of Liechtenstein.
52 $\frac{1}{2}$	40	10 $\frac{1}{2}$	37	Delagoa Bay . . .	Sir John Kirk, K.C.B.
52 $\frac{1}{2}$	39 $\frac{1}{2}$	9 $\frac{1}{2}$	25 $\frac{1}{2}$	Mashonaland . . .	Sir John Willoughby, Bart.
- 53 $\frac{1}{2}$	36 $\frac{1}{2}$	9 $\frac{1}{2}$	23 $\frac{1}{2}$	Do. . . .	J. Brander Dunbar.
52 $\frac{1}{2}$	35 $\frac{1}{2}$	9 $\frac{1}{2}$	22	Somaliland . . .	The late W. Babington.
52 $\frac{1}{2}$	37 $\frac{1}{2}$	...	...	Do. . . .	Major H. G. C. Swayne.
52 $\frac{1}{2}$	40 $\frac{1}{2}$	10	36 $\frac{1}{2}$	Zululand . . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
52 $\frac{1}{2}$	42	11 $\frac{1}{2}$	35	Natwani River . . .	R. J. Cuninghame.
- 52 $\frac{1}{2}$	44	11	43 $\frac{1}{2}$	Lebombo Mountains . .	Count E. Hoyos.
52 $\frac{1}{2}$	41 $\frac{1}{2}$	10 $\frac{1}{2}$	39 $\frac{1}{2}$	Zululand . . .	Hon. Charles Ellis.
52 $\frac{1}{2}$	37 $\frac{1}{2}$	9 $\frac{1}{2}$	23 $\frac{1}{2}$	Somaliland . . .	T. W. H. Clarke.
52	42	10 $\frac{1}{2}$	33	South Africa . . .	The late W. F. Webb.
52	36 $\frac{1}{2}$	10	39 $\frac{1}{2}$	Somaliland . . .	E. N. Buxton.
- 52	43 $\frac{1}{2}$	10	39 $\frac{1}{2}$	Damaraland . . .	Th. Rehbock.
52	38 $\frac{1}{2}$	10 $\frac{1}{2}$	35	South Africa . . .	James J. Harrison.
- 52	38 $\frac{1}{2}$	...	...	Do. . . .	C. T. Jones.
51 $\frac{1}{2}$	36 $\frac{1}{2}$	11	29	Zululand . . .	A. J. Brandon.
51 $\frac{1}{2}$	39 $\frac{1}{2}$	10	31 $\frac{1}{2}$	Somaliland . . .	W. H. Cobb.
51 $\frac{1}{2}$	39 $\frac{1}{2}$	10 $\frac{1}{2}$	28 $\frac{1}{2}$	South Africa . . .	W. P. Rylands.
51 $\frac{1}{2}$	38 $\frac{1}{2}$	10	26 $\frac{1}{2}$	British Central Africa .	John Yule.
51 $\frac{1}{2}$	36 $\frac{1}{2}$	11	29	Zululand . . .	A. J. Brandon.
51 $\frac{1}{2}$	40 $\frac{1}{2}$	10 $\frac{1}{2}$	28 $\frac{1}{2}$	Mashonaland . . .	Col. F. Rhodes, D.S.O.
50 $\frac{1}{2}$	38	9 $\frac{1}{2}$	34	Somaliland . . .	J. Bennett-Stanford.

GREATER KUDU (*Strepsiceros kudu*)—*continued*.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
50½	38½	10	36½	Somaliland . . .	Digby Davies.
50½	38	9½	30½	Do. . . .	Captain G. Campbell.
50½	38	10¾	22½	South Africa . . .	R. A. Cooper.
...	38	12	36	?	Earl of Dartmouth.
50½	38½	8½	29½	Somaliland . . .	W. D. James.
50½	35	9½	24½	Do. . . .	B. R. M. Glossop.
-50	39	10½	48½	Khama's Country . . .	H. A. Bryden.
50	35	9½	13½	Somaliland . . .	Captain J. M'Call Maxwell.
-50	45	11	37	Abyssinia . . .	Prince de Lucinge.
50	37½	10	28¾	South Africa . . .	E. D. Scott.
49½	39½	10½	40½	Limpopo River . . .	R. M. Sagar-Musgrave.
49½	40½	9½	33½	Zomba, B.C.A. . . .	C. C. Bowring.
-49½	37½	10½	19½	Somaliland . . .	C. V. A. Peel.
49½	36	9½	31½	Do. . . .	Major C. F. Blane.
-49½	40½	11¾	47	Matabeleland . . .	Hon. John Ward.
49	38	8½	29½	Somaliland . . .	C. Liddell.
-49	39	11¾	25	Nyasaland . . .	Alex. R. Alston.
48½	38	10	32	Sabi River . . .	Sir Thomas Fowler, Bart.
48	37	10½	27¾	British Central Africa . . .	Commander A. T. Hunt.
48	35½	10	31	Somaliland . . .	R. McD. Hawker.
48	35	10½	30	Do. . . .	W. W. Ashley.
-48	...	10	33½	Do. . . .	A. E. Pease.
47½	35½	9½	24½	Do. . . .	A. H. Straker.
47½	36½	10½	27½	South Africa . . .	British Museum.
47½	35½	9½	26½	Somaliland . . .	Prince Nicolas Ghika.
47½	35	8½	38½	Sudan . . .	Col. Ralph Vivian.
47½	37½	10½	35½	South Africa . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
47½	34½	9½	25	Somaliland . . .	Lord Delamere.
47½	34½	10	21	Do. . . .	Major C. C. Ellis.

GREATER KUDU (*Strepsiceros kudu*)—continued.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
47	35 $\frac{3}{4}$	10 $\frac{1}{2}$	33 $\frac{1}{2}$	Somaliland . . .	J. Kenneth Foster.
47	35 $\frac{3}{4}$	10	31	Do. . . .	T. W. Greenfield.
47	35 $\frac{1}{2}$	10 $\frac{1}{2}$	31 $\frac{1}{4}$	Do. . . .	P. B. Vander-Byl.
47	35	8 $\frac{3}{4}$	23 $\frac{1}{4}$	Do. . . .	Captain B. L. Carew.
46 $\frac{3}{4}$	37 $\frac{1}{2}$	9 $\frac{3}{4}$	39 $\frac{1}{4}$	Do. . . .	F. G. Gunnis.
46 $\frac{1}{2}$	34 $\frac{3}{4}$	10	25 $\frac{1}{4}$	Sudan	Lieut.-Col. Hon. W. Coke.
46 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$	...	Abyssinia . . .	British Museum.
46 $\frac{1}{2}$	33 $\frac{3}{4}$	9 $\frac{1}{2}$	24 $\frac{1}{2}$	Somaliland . . .	Major H. G. C. Swayne.
46 $\frac{1}{2}$	34 $\frac{1}{2}$	10	31	Do. . . .	P. R. Denny.
46 $\frac{1}{2}$	38	10 $\frac{3}{4}$	41 $\frac{1}{4}$	Do. . . .	A. J. Forbes.
46	36	9 $\frac{3}{4}$	27 $\frac{3}{4}$	Do. . . .	G. H. Cheetham.
-46	36	9 $\frac{1}{2}$	16	Do. . . .	Count Scheibler.
-45 $\frac{7}{8}$	33 $\frac{5}{8}$	9 $\frac{1}{8}$	25 $\frac{5}{8}$	Sudan	Count T. Palfy.
45 $\frac{1}{2}$	31 $\frac{1}{8}$	9 $\frac{1}{2}$	18 $\frac{1}{2}$	Somaliland . . .	Lord Delamere.
-45 $\frac{3}{8}$	34 $\frac{1}{4}$	9 $\frac{1}{2}$	11 $\frac{1}{16}$	Do. . . .	Paris Museum.
45	35	9 $\frac{3}{8}$	32 $\frac{1}{8}$	Kaokoland . . .	Captain F. Cookson.
43 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{3}{4}$	29	Benguela . . .	G. W. Penrice.
♀ 37	10	...	...	South Africa . . .	F. C. Selous.
♀ 27 $\frac{1}{2}$	...	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Do. . . .	Julius Jeppé.
♀ See <i>Field</i> , 4th February 1893				Do. . . .	F. C. Selous.
-♀ 26 $\frac{3}{4}$	...	...	36	?	C. T. Jones.

Head of Lesser Kudu, from a specimen shot by Mr. Norman B. Smith.

LESSER KUDU (*Strepsiceros imberbis*).

Godir of the Somalis. *Sara* of the Abyssinians of Danakil.
Kungu of the Swahilis.

An old male shot by Viscount Edmond de Poncins, 18th Nov. 1897,
 Digago, Somaliland, measured as follows :—

	inches.
From nose to root of tail	67
Tail	$11\frac{7}{8}$
Height at withers	$41\frac{3}{8}$
Round the body	41
" neck	$20\frac{1}{2}$

Except for its brighter colour, the closer spiral and smaller divergence of the horns, and the absence of a fringe of long hair on the throat (whence the name *imberbis*), this beautiful little antelope might almost pass for a miniature of its larger relation. Height at shoulder about 3 feet 5 inches.

Distribution.—North-East Africa, from Somaliland to German and British East Africa. This antelope generally goes in pairs or threes, and is partial to the cover of thick bush, from which it seldom emerges except for the purpose of feeding. Till the opening up of its habitat, it was very rare in collections.

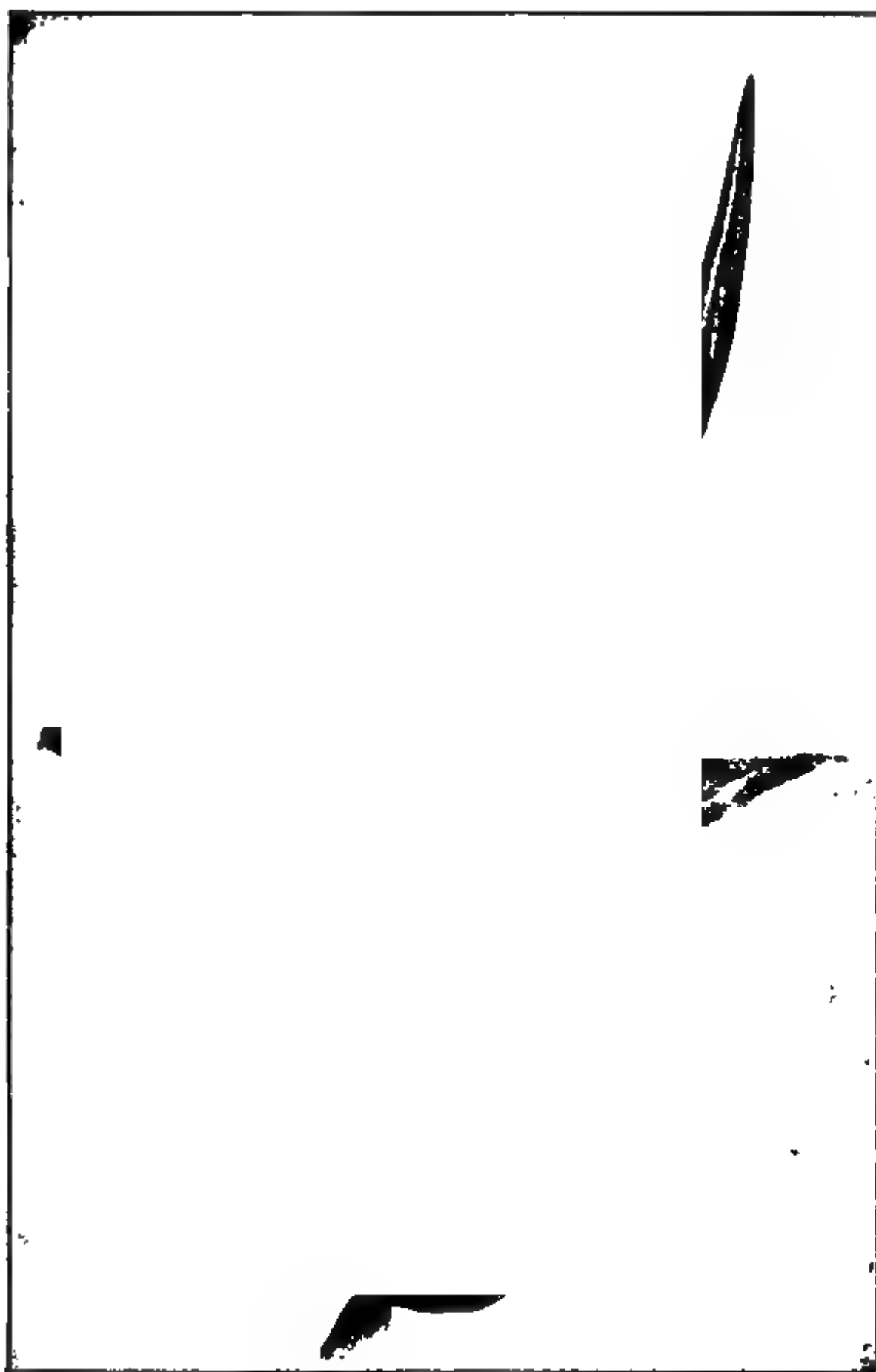
Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
35½	26½	7½	16½	N. Somaliland	Norman B. Smith. (See illustration.)
34	26½	...	...	Do.	Major H. G. C. Swayne.
34	26	6¾	14½	Do.	W. W. Ashley.
34	27	6¾	11	Do.	R. McD. Hawker, British Museum.
33	26	7½	9½	Do.	Norman B. Smith.
32½	25½	7	8	Somaliland	Capt. T. R. Harkness.
32½	25¾	7	17	Do.	Sir Edmund G. Loder, Bart.
-32	26	6½	10½	Hawash, Abyssinia	Prince de Lucinge.
-31½	25½	...	11½	N. Somaliland	J. Menges.
31¾	24½	6½	14½	Do.	Lord Delamere.
31½	25½	6¾	11¾	Do.	Sir John Kirk, K.C.B.
-31½	24	6½	12	Do.	T. W. H. Clarke.
31½	24	6¾	...	Do.	Major C. C. Ellis.
31½	25	7	10	Do.	Capt. G. F. T. Leather.
31½	24½	6¾	14½	Do.	Major H. G. C. Swayne.
31	25	7½	9½	Do.	W. H. Cobb.
31	24	6¾	9½	Do.	G. H. Cheetham.
-30¾	25	6½	9¾	Do.	Viscount Edmond de Poncins.
30¾	24¾	6¾	11¾	Do.	W. D. James.
30¾	24	6¾	9	Do.	E. P. Hare.
30¾	25½	6¾	11¾	Do.	A. H. Straker.
-30½	23	6½	8½	Teita, East Africa	E. Gedge.
-30½	24	6	12½	Somaliland	T. W. H. Clarke.
30½	24¾	6¾	10½	Do.	Lord Delamere.
-...	24	...	...	Do.	Bombay Natural History Society's Museum.

LESSER KUDU (*Strepsiceros imberbis*)—*continued*.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
30½	24	6½	11½	Somaliland . .	H.R.H. le Duc d'Orléans.
-30	25½	7	14	Do. . .	Capt. M. M'Neill.
29¾	22½	6¾	13½	Do. . .	R. Wahrmann.
-29¾	21½	6½	10½	Do. . .	Count J. de Bylands.
29½	23	6½	13¾	Do. . .	Prince Demeter Ghika.
29¾	22½	6¾	13¾	Do. . .	E. Lort-Phillips.
-29½	25	7	12¾	Do. . .	A. H. Straker.
29	23½	6¾	13½	Do. . .	J. Kenneth Foster.
29	23½	6½	11½	East Africa . .	Sir Robert Harvey, Bart.
-29	22	6½	12	Somaliland . .	A. Ohlsson.
29	23½	6	12½	Do. . .	R. McD. Hawker.
28¾	21¾	6½	9	East Africa . .	H. C. V. Hunter.
28¾	22½	6¾	11	Somaliland . .	Sir H. D. Tichborne, Bart.
28¾	21½	5	9	East Africa . .	Sir Edmund G. Loder, Bart.
28¾	22	6½	13	Somaliland . .	R. McD. Hawker.
-28¾	23	7	11	Do. . .	Dr. Percy Rendall.
28½	23½	7½	10	Do. . .	T. W. Greenfield.
-28½	20½	7	13½	Do. . .	Count E. Hoyos.
28½	23	5½	11½	Do. . .	Sir John Kirk, K.C.B., British Museum.
...	23	6¾	10¾	Do. . .	Col. Arthur Paget.
28	23	...	15	Do. . .	Lieut.-Col. J. W. H. Flanagan.
28	23	6½	11½	Do. . .	P. B. Vander-Byl.
28	22	6¾	9½	Do. . .	Captain C. H. Villiers.
28	22	6¾	13½	Do. . .	Dr. Donaldson Smith.
27¾	24	6½	11	Do. . .	Ford G. Barclay.
...	-24	6¾	13½	Do. . .	C. V. A. Peel.
27½	21½	6½	12¾	South Somaliland .	Sir John Kirk, K.C.B.
27½	22	6½	7	Somaliland . .	Hon. Walter Rothschild.
-27	...	6½	13	Do. . .	A. E. Pease.

LESSER KUDU (*Strepsiceros imberbis*)—continued.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-26 $\frac{1}{8}$	24	6 $\frac{3}{4}$	13	Somaliland . .	Prince Demeter Ghika.
26 $\frac{3}{4}$	19 $\frac{3}{4}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . .	Edinburgh Museum.
26 $\frac{1}{2}$	22	6	14	Do. . .	Captain C. S. Timins.
26 $\frac{1}{4}$	21 $\frac{3}{4}$	6 $\frac{1}{2}$	12 $\frac{5}{8}$	Do. . .	Major H. C. Morland.
26 $\frac{1}{8}$	21 $\frac{1}{2}$	6 $\frac{1}{2}$	12 $\frac{3}{4}$	Do. . .	F. G. Gunnis.
-25 $\frac{5}{8}$	21 $\frac{1}{4}$	6 $\frac{1}{2}$	12 $\frac{3}{4}$	Do. . .	Count Scheibler.
-...	21	...	...	Do. . .	J. D. Inverarity.
-25 $\frac{5}{8}$	20 $\frac{5}{8}$	6 $\frac{3}{8}$	11	Do. . .	Paris Museum.
-25	21 $\frac{3}{4}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . .	Digby Davies.
24 $\frac{3}{4}$	19 $\frac{1}{4}$	5 $\frac{3}{4}$	9 $\frac{3}{4}$	Do. . .	Captain W. H. Williamson.
24	20	6	14	East Africa . .	W. Astor Chanler.
-24	19	6	14 $\frac{1}{2}$	Somaliland . .	J. Brander-Dunbar.
-24	20 $\frac{3}{4}$	5 $\frac{1}{2}$	9 $\frac{1}{2}$	Do. . .	Julius Jeppe.



Head of Cow Eland shot by F. C. Selous.

ELAND (*Taurotragus oryx*).

<i>Doo</i> of the Masaras.	<i>Mofu</i> of the Mashonas.
<i>Ee-pofu</i> of the Makalakas.	<i>Mpofu</i> of Swahili.
<i>Eland</i> of the Dutch and English.	<i>Mpofu</i> in the Barotse country.
<i>Impofu</i> of the Amandebele.	<i>Mpofu</i> in the Lake Ngami country.
<i>Insefu</i> of the Masubias and Batongas.	<i>Oo-schefu</i> of the Macubas.
	<i>Pofu</i> of the Bechuanas.
<i>Tsefu</i> in the Chilala and Chibisa countries.	

In addition to being the largest of all antelopes, eland are distinguished from their immediate relatives by the presence of horns in both sexes; these forming a close spiral like a screw, with an upward and outward direction. Female horns are more slender than those of the bulls. Other distinctive features of the genus are to be found in the large dewlap and the long, tufted, ox-like tail.

Bulls of the common eland stand from 5 feet 9 inches to as much as $6\frac{1}{2}$ feet at the shoulder. They have a large tuft of brown hair on the forehead, and the horns are of moderate length and stoutness. The typical race (*T. oryx typicus*), which formerly extended from the Cape nearly to the Zambesi, has a uniformly tawny skin, without transverse white stripes or a dark brown band above the knees; and appears to be the largest form. Apparently somewhere in Rhodesia a dark brown band is assumed by immature bulls. And as we go northward towards the Zambesi, and thence north and east into the heart of the continent, the bulls have not only this dark leg-band, but the body in both sexes is marked by fine vertical white lines. As this striped variety was discovered by Livingstone and his companions, it has been appropriately named *T. oryx livingstonianus*. Westward the species ranges into Angola.

Throughout Southern Africa, largely owing to the skin-hunters, eland are now becoming exceedingly scarce; and they have already more or less completely disappeared from Cape Colony, Natal, the Orange Free State, Griqualand West, and the Transvaal. In the northern Kalahari, where they subsist for a great part of the year without water, large herds are still to be met with. No species of large game is more easily approached than eland, and, as a rule, none succumbs more speedily to the bullet. Occasionally female eland develop horns in which the spiral is almost obsolete and the length exaggerated; these have been supposed to indicate a distinct species (*Antilope triangularis*).

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Head of Bull Eland.

ELAND (*Taurotragus oryx*)—continued.

Length straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
- ♀ 35 $\frac{1}{2}$	8 $\frac{1}{2}$	20 $\frac{1}{2}$	Zomba Plain, B.C.A.	Dr. Percy Rendall.
- ♀ 33 $\frac{1}{2}$	...	...	?	F. H. Barber.
♀ 32 $\frac{1}{2}$	6 $\frac{1}{2}$	...	Near Chobe River	M. C. Greaves-Bagshawe.
¹ - ♀ 32 $\frac{1}{2}$	6 $\frac{1}{2}$	5 $\frac{3}{4}$	South Africa	Julius Jeppe.
- 32 $\frac{1}{2}$	...	...	?	Carl Hagenbeck.
¹ ♀ 32 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{3}{4}$	?	Mr. Justice Hopley.
- 32	...	...	?	J. Benett-Stanford.
31 $\frac{3}{4}$	12 $\frac{1}{2}$	22 $\frac{3}{4}$	?	Hon. Walter Rothschild.
♀ 31 $\frac{3}{4}$	7 $\frac{3}{4}$	17	Matabeleland	Major R. Hayes-Sadler.
♀ 31 $\frac{3}{4}$	7 $\frac{1}{2}$	15 $\frac{1}{2}$	?	F. Struben.
♀ 31 $\frac{3}{4}$	7 $\frac{1}{2}$	18 $\frac{1}{2}$	Mashonaland	S. Chillingworth.
31 $\frac{1}{2}$	10 $\frac{1}{2}$	25 $\frac{1}{2}$	East Africa.	F. J. Jackson, C.B.
31 $\frac{1}{2}$	12 $\frac{3}{4}$	12 $\frac{1}{2}$	Near where Salisbury now stands	F. C. Selous, British Museum.
♀ 31 $\frac{1}{2}$	8 $\frac{1}{2}$	20 $\frac{1}{2}$	Mashonaland	Do.
♀ 31 $\frac{1}{2}$	7	17 $\frac{1}{2}$	?	Julius Jeppe.
31	13	12	Mashonaland	F. C. Selous.
31	9 $\frac{1}{2}$	21	Nyasaland	F. Vaughan Kirby.
♀ 31	...	...	?	J. Benett-Stanford.
- 30 $\frac{3}{4}$	11 $\frac{1}{2}$	28 $\frac{3}{4}$	Nyasaland	Major P. W. Forbes.
30 $\frac{3}{4}$	8 $\frac{1}{2}$	25	?	R. A. Cooper.
♀ 30 $\frac{3}{4}$	7 $\frac{1}{2}$	21 $\frac{3}{4}$	Lake Ngami	Major H. J. Goold-Adams, C.B., C.M.G.
- 30 $\frac{1}{2}$	...	...	?	O. R. Dunell.
♀ 30	7 $\frac{1}{2}$	20 $\frac{1}{2}$	Hanyani River	Capt. M. D. Graham.
- 29 $\frac{3}{4}$	9 $\frac{1}{2}$	9	British Central Africa	H. C. Macdonald.
29 $\frac{3}{4}$	9 $\frac{1}{2}$	9	Do.	Dr. Percy Rendall.
29 $\frac{1}{2}$	8	22	Do.	Commander A. T. Hunt.
29 $\frac{1}{2}$	7 $\frac{1}{2}$	8	S. Africa	C. D. Rudd.
- 29 $\frac{1}{2}$	15 $\frac{1}{2}$	12 $\frac{3}{4}$	Do.	A. Ohlsson.
- ♀ 29 $\frac{1}{2}$	8 $\frac{1}{2}$	17	Do.	Mr. Justice Hopley.

¹ The so-called *A. triangularis*.

ELAND (*Taurotragus oryx*)—*continued*.

Length straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29	10	17	Near Lake Ngami .	Major H. J. Goold-Adams, C.B., C.M.G.
♀ 29	7½	18½	Matabeleland .	Hon. C. Greville.
29	12½	14	Do. .	Abe Bailey.
29	8½	13½	Benguela .	G. W. Penrice.
-29	...	...	Pungwe .	Count E. Hoyos.
28½	13½	4½	Matabeleland .	W. Van Ness.
28½	11½	24	?	F. Struben.
♀ 28½	7½	6½	Kalahari .	H. A. Bryden.
28½	11½	8½	British Central Africa .	Rowland Ward.
28½	11	18½	Barotseland .	R. T. Coryndon.
28½	10½	12½	?	Sir Edmund G. Loder, Bart.
28	10½	19½	British Central Africa .	J. E. Gough.
28	12	19	Upper Shiré, B.C.A. .	C. C. Bowring.
-28	8½	15½	E. C. Africa .	James J. Harrison.
- ♀ 28	...	...	?	Cape Town Museum.
♀ 28	8½	19½	Barotseland .	R. T. Coryndon.
27½	11	16	Mashonaland .	Sir John Willoughby, Bart.
27½	10½	18	B. E. Africa .	Lord Delamere.
27½	11½	12½	?	R. A. Cooper.
- ♀ 27½	7½	16	?	James J. Harrison.
♀ 27½	8½	5	Rhodesia .	W. W. Ashley.
27½	8½	10	Matabeleland .	Capt. Sir K. Fraser, Bart.
27½	11	15½	Pungwe .	P. B. Vander-Byl.
♀ 27½	13	20	Matabeleland .	Major James Grant.
- ♀ 27	...	10	East Africa .	Sir John Willoughby, Bart.
27	11	10½	Pungwe .	Marquis of Hamilton.
27	11½	13	Do. .	F. J. Mitchell.
♀ 26	7½	13½	East Africa .	Lord Delamere.
26	8½	10½	Kaokaland .	Capt. F. Cookson.

Frontlet and Horns of Senegambian Eland, from the Gambia.

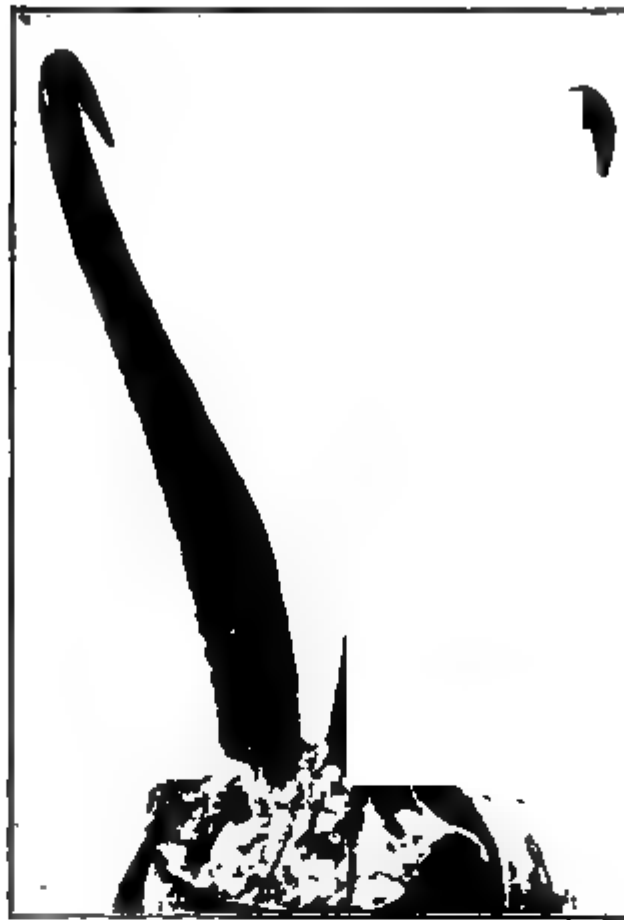
SENEGAMBIAN ELAND (*Taurotragus derbianus*).

Although living specimens appear formerly to have been in the collection at Knowsley, this magnificent species is chiefly known in England by the horns. These are longer and stouter than those of the common species, and thus confirm the statements as to the larger size of the western animal. The bulls are reported to have no dark fore-lock, but a dark-brown mane. Horns of cows are relatively small.

Distribution.—The open districts of the Interior of Senegambia and Gambia.

SENEGAMBIAN ELAND (*Taurotragus derbianus*)—*continued*.

Length straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-40	13½	Single horn	?	Berlin Museum.
-39½	...	...	?	Paris Museum.
34½	14½	22½	Gambia . . .	Sir Edmund G. Loder, Bart.
-34	13½	...	?	F. Coburn.
34	12½	...	?	J. Carr Saunders.
-34	11½	17	Gambia . . .	Dublin Museum.
32½	12½	29½	Do. . . .	A late Earl of Derby, British Museum.
32½	9½	12½	?	Sir Edmund G. Loder, Bart.
32½	13	23½	Gambia . . .	II.R.H. le Duc d'Orléans.
32	13	24½	?	Hon. Walter Rothschild.
31½	11½	28½	Gambia . . .	A late Earl of Derby, British Museum.
31½	12½	15½	Do. . . .	H..C. Goddard.
31½	12	18½	?	Sir Victor Brooke's Collection.
-31	11½	...	Gambia . . .	Sir R. B. Llewelyn, K.C.M.G.
30½	10½	26½	?	F. W. Reade, British Museum.
-27½	13½	23½	Senegambia . .	Paris Museum.
24½	9	6½	Do. . . .	F. W. Reade, British Museum.



Frontlet and Horns of Count Arpad Teleki's Chamois.

CHAMOIS (*Rupicapra tragus*).

With the chamois we take leave of the antelopes properly so-called, and come to a group connecting the former to a considerable extent with the true goats, one member of the group being indeed commonly designated the Rocky Mountain goat. Most of these ruminants are more or less goat-like in general appearance, having narrow goat-like teeth and short or moderately long tails. Their horns, which are black in colour, are, however, quite distinct from those of the goats, being for the most part cylindrical in section, and curving backwards. From the other members of the group the chamois is at once distinguished by the sharp hook formed by the backward curvature of the horns, which rise almost vertically from the head. The coloration is too well known to need description, although attention may be directed to the dark streak running from the eye to the sides of the muzzle. Height at shoulder reaching 32 inches; weight of male generally about 65 lbs. (although 125 lbs. has been recorded in one case), that of female from 45 to 50 lbs.

Distribution.—The mountains of Central and Southern Europe, from the Pyrenees to the Caucasus. Probably three distinct races may be recognised, namely, the comparatively small izard of the

Pyrenees, the true chamois, or gems, of the Alps, and a third form in the Caucasus.

Length on front curve.	Circum- ference.	Tip to Tip.	Weight.	Locality.	Owner.
1-12 $\frac{1}{2}$	4 $\frac{1}{8}$	...	123 $\frac{1}{2}$ lbs. not clean	Retyezat, Carpathians	Count Arpad Teleki. (See illustration.)
-12	...	9 $\frac{1}{2}$	103 lbs. clean	Tyrol . . .	W. A. Baillie-Grohman.
-12	4	...	...	Hinter Riss . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
-12	...	...	...	Tyrol . . .	Count Arco.
11 $\frac{1}{2}$	3 $\frac{5}{8}$	6 $\frac{1}{2}$	...	Albreis Morteratch, Engadine	A. E. Pease.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	...	?	Col. Howard.
-11 $\frac{1}{2}$	...	4 $\frac{1}{8}$	...	Retzezah, Transyl- vania	Baron A. Nopcsa.
-11	4	...	...	Tyrol . . .	W. A. Baillie-Grohman.
-11	3 $\frac{3}{4}$	5 $\frac{1}{2}$	...	?	Count John of Meran.
10 $\frac{3}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{16}$	...	Tyrol . . .	Sir Edmund G. Loder, Bart.
10 $\frac{3}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{16}$	...	Do. . . .	Do.
-10 $\frac{3}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{2}$	...	?	Eberhard Hollinek.
-10 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{5}{8}$	...	Austria . . .	H.R.H. the Duke of Braganza.
-10 $\frac{1}{4}$	2 $\frac{3}{4}$	5	...	?	Count John of Meran.
-10 $\frac{3}{8}$	3	4 $\frac{1}{8}$	...	?	Marquis Ivrea.
10 $\frac{1}{4}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	...	?	E. N. Buxton.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	3 $\frac{7}{8}$	...	Tyrol . . .	Sir Edmund G. Loder, Bart.
-10 $\frac{1}{4}$	3	5 $\frac{3}{8}$	...	?	Count Palffy.
-10 $\frac{1}{4}$	...	...	...	Transylvania . .	C. G. Danford.
-9 10 $\frac{1}{4}$	...	...	...	Grindelwald . .	F. A. Labouchere.
10 $\frac{1}{8}$	3 $\frac{1}{4}$	4 $\frac{1}{2}$	...	Austrian Tyrol . .	G. A. Goldschmidt.
10	3 $\frac{5}{8}$	4 $\frac{3}{4}$	...	Transylvania . .	J. G. K. Young.
-10	...	...	...	Grindelwald . .	F. A. Labouchere.
9 $\frac{7}{8}$	3 $\frac{1}{4}$	4 $\frac{1}{4}$	...	Tyrol . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
9 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{7}{8}$	...	Transylvania . .	C. G. Danford, British Museum.
9 $\frac{3}{4}$	3 $\frac{3}{4}$	3	...	W. Caucasus . .	St. George Littledale.

¹ Greatest width, 7 $\frac{1}{2}$ inches.

CHAMOIS (*Rupicapra tragus*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
9 $\frac{1}{8}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Caucasus . . .	St. George Littledale.
9 $\frac{1}{8}$	3 $\frac{1}{2}$	4	Austrian Tyrol . .	Capt. R. A. J. Montgomerie, C.B., R.N.
9 $\frac{1}{8}$	3	3 $\frac{1}{8}$	?	Hon. Walter Rothschild.
-9 $\frac{1}{8}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	Valtelline Alps . .	Major C. C. Ellis.
-9 $\frac{1}{2}$	3	3 $\frac{1}{2}$	Alps . . .	Dublin Museum.
9.05	3.15	4.75	Savoy . . .	Viscount Edmond de Poncins.
9 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{2}$	W. Caucasus . . .	St. George Littledale.
-9 $\frac{1}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{2}$	Austria . . .	H. Brinsley Brooke.
9	3	5 $\frac{1}{4}$	Pyrenees . . .	Sir Victor Brooke's Collection.
9	3 $\frac{1}{4}$	4	Tyrol . . .	Julius Jeppe.
♀ 9	2 $\frac{3}{4}$	4 $\frac{1}{2}$	Styria . . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
-9	3 $\frac{1}{2}$	2 $\frac{3}{4}$	Valtelline Alps . .	Count Scheibler.
9	3	3 $\frac{3}{4}$	Zillerthall . . .	Noel Fenwick.
8 $\frac{3}{4}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	Austrian Tyrol . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
8 $\frac{3}{4}$	3 $\frac{1}{8}$	3	Caucasus . . .	St. George Littledale.
8 $\frac{3}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Austria . . .	P. B. Vander-Byl.
8 $\frac{3}{4}$	3	4 $\frac{1}{4}$	Caucasus . . .	Prince Demidoff.
8 $\frac{3}{8}$	3 $\frac{1}{2}$	2 $\frac{3}{8}$	Do. . . .	St. George Littledale.
♀ 8 $\frac{3}{8}$	...	3 $\frac{1}{8}$	Bavaria 1870 . . .	F. C. Selous.
8 $\frac{1}{2}$	2 $\frac{3}{8}$	4	Alps . . .	The late J. Gould, British Museum.
♀ 8 $\frac{3}{8}$	2 $\frac{1}{4}$	4 $\frac{3}{8}$	Pyrenees . . .	Sir Victor Brooke's Collection.
8 $\frac{1}{4}$	3 $\frac{1}{8}$	3 $\frac{3}{8}$	?	Sir Clement Hill, Bart.
♀ 8 $\frac{1}{8}$	3	2	Caucasus . . .	St. George Littledale.
8	2 $\frac{3}{8}$	...	Asturias . . .	H. Brinsley Brooke.
8	2 $\frac{1}{2}$	1 $\frac{1}{2}$	Caucasus . . .	Prince Demidoff.
♀ 7 $\frac{1}{2}$	2 $\frac{1}{2}$	7 $\frac{1}{8}$	Do. . . .	Do.

Head of Himalayan Goral. From a specimen shot in Nepal, in the British Museum.

HIMALAYAN GORAL (*Cemas goral*).

Goral of the W. Himalaya. *Pj, Pjar, Rai, Rom* of Kashmir.
Sáhare, Sarr of the Sutlej valley.

The gorals are near relatives of the serows, from which they may be distinguished by their inferior size, shorter horns, and absence of face-glands, as well as by certain differences in the conformation of the skull. The horns curve regularly backwards, are conical in form, and marked by small irregular ridges for the greater part of their length. The hair is somewhat rough and shaggy, and the tail considerably longer than in the chamois. In general colour the Himalayan goral is brown, tending more or less to rufous or grayish, with the face paler and rufescent, a black line from the nape down the back to the tail (which is also black), and a dark stripe down the front of each leg. Height at shoulder from 26 to 28 inches; weight from 58 to 63 lbs.

By English sportsmen the goral is commonly termed the Himalayan chamois, its habits being very similar to those of the true chamois.

Distribution.—The Himalaya, from Bhutan and Sikim to Kashmir, at elevations from 3000 to 6000 feet.

HIMALAYAN GORAL (*Cemas goral*)—*continued*.

Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
-8½	...	...	Bissahir . . .	Major A. E. Ward.
♀ -8½	...	...	Dalhousie . . .	J. Johnston-Stewart.
-8	...	...	Kumaon . . .	Major A. E. Ward.
-8	...	...	Chamba . . .	Capt. C. B. Vandeleur.
8	3½	3½	Do. . .	Capt. Cecil Levita.
7½	3½	3½	? . .	Hume Collection, British Museum.
7½	3	2½	Near Musuri . . .	A. O. Hume, C.B.
-7½	...	...	Mountains near Dal- housie . . .	Capt. F. E. S. Adair.
7½	3½	2½	Chamba . . .	A. H. Ogilvy Spence.
7½	3	3	Do. . .	F. W. H. Walshe.
7½	3½	2½	Do. . .	Sir Edmund G. Loder, Bart.
-7½	3½	3½	Jhelam Valley, Kash- mir . . .	P. H. G. Powell-Cotton.
7	2½	3½	? . .	Major J. A. Orr-Ewing.
-7	3½	3½	? . .	Capt. H. W. Codrington.
-7	...	...	Near Almora, N.W.P. . .	Capt. B. H. Boucher.
-7	...	...	? . .	Indian Museum.
-7	...	...	Punjab . . .	Capt. A. Hicks-Beach.
6½	4½	3	Kumaon . . .	A. S. Crum.
6½	3½	2½	? . .	Owen Bevan.
-6½	...	...	? . .	Major R. H. Rattray.
6½	3½	3½	? . .	Capt. H. C. Copeman.
-6½	3½	2	Dalhousie . . .	J. Johnston-Stewart.
6½	3½	2½	? . .	Dr. W. P. Y. Bainbrigge.
6½	3½	3½	West of Musuri . . .	B. R. M. Glossop.
6½	3	4½	? . .	Capt. L. I. B. Hulke.
6	4	2½	? . .	J. E. Vaughan.
-♀ 5½	2½	1½	Jhelam Valley, Kash- mir . . .	P. H. G. Powell-Cotton.
♀ 4½	2½	2½	? . .	E. L. Phelps.

OTHER GORALS.

Species.	Collected by	Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
<i>Cemas edwardsi</i>	Père A. David	$8\frac{11}{16}$ $8\frac{5}{16}$	$7\frac{1}{2}$ $7\frac{1}{4}$	4 2	Moupin, Tibet	Paris Museum.
„ <i>argyrochoetus</i>	Do.	$9\frac{1}{2}$	$7\frac{1}{8}$	4	Ta - tsien - lou, Szechuan	Do.
„ <i>caudatus</i>	Do.	$6\frac{5}{8}$ $6\frac{1}{4}$	$3\frac{2}{5}$ 4	$3\frac{1}{8}$ $3\frac{1}{2}$	North of Pekin ?	Do. British Museum.
„ <i>cinereus</i>	Do.	$7\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{1}{16}$	Tibet . .	Paris Museum.
„ <i>griseus</i>	Do.	$4\frac{3}{4}$	$3\frac{1}{8}$	$2\frac{3}{8}$	Do. . .	Do.

JAPANESE SEROW or GORAL (*Nemorhædus crispus*).

A small species serving in some degree to connect the gorals with the serows, since it agrees approximately in size with the former, but in other characters with the latter.

Distribution.—The southern islands of Japan ; an allied species (*N. swinhoi*) inhabiting the island of Formosa.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
$5\frac{1}{4}$	$3\frac{1}{8}$	$3\frac{1}{8}$	Japan	British Museum.

Skull and Horns of Himalayan Serow (A. O. Hume's record specimen).

HIMALAYAN SEROW (*Nemorhædus bubalinus*).

Serow, serowa of Gurhwal and many parts of the Himalaya.

Ramu-Halj, Sálábheer.

Jungal, Kangra.

Yamu, Kulu.

Goa, Chamba.

Aimu, Kumaon.

A large and clumsily built ruminant, with the ears long, the hair coarse, rather thin, and elongated into a crest from the nape to the withers ; the under-fur found in the gorals being absent. The general colour of the upper parts is black or dark gray, with a grizzled appear-

ance, owing to the whitish bases of the hairs; the under parts, shoulders, and thighs being rusty red. Although by no means large, the shining black, somewhat rugose horns form decidedly handsome trophies. Height at shoulder from 33 to 37 or 38 inches; weight from 120 to 190 lbs.

Distribution.—Throughout the Himalaya from Kashmir to the Mishmi Hills, at elevations of from 6000 to 12,000 feet; also recorded from Yunnan.

Head of Male Himalayan Serow.

From a specimen shot by W. T. Blanford in Sikim, now in the British Museum.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-12.25	6.5	2.75	Gurhwal . . .	A. O. Hume, C.B. (See Illustration on page 320.)
-12	...	.	Himalaya . . .	Major A. E. Ward.
-11	...	.	?	Major R. H. Rattray.
10½	5½	3½	?	Hon. Charles Ellis.
-10½	5½	3½	Gurhwal . . .	A. P. Davis.
-10½	...	...	North of Musuri . .	Capt. Harry V. Brooke.
-10	5½	5½	Mishmi Hills . .	A. O. Hume, C.B.
10	...	...	Kumaon . . .	Major A. E. Ward.

HIMALAYAN SEROW (*Nemorhædus bubalinus*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
9 $\frac{7}{8}$	5 $\frac{8}{8}$	4 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
9 $\frac{3}{4}$	5 $\frac{1}{8}$	6	Pir Panjal . . .	R. Lydekker, British Museum.
9 $\frac{1}{2}$	5 $\frac{8}{8}$	4 $\frac{3}{4}$	Kashmir . . .	St. George Littledale.
9 $\frac{1}{2}$	4 $\frac{7}{8}$	3 $\frac{1}{2}$	Nepal . . .	The late B. H. Hodgson, British Museum.
9 $\frac{1}{2}$	5 $\frac{8}{8}$	3 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
- 9 9 $\frac{3}{8}$	5 $\frac{1}{8}$	4	Sind Valley . . .	P. H. G. Powell-Cotton.
9	4 $\frac{1}{2}$	2 $\frac{1}{2}$	North of Musuri . . .	B. R. M. Glossop.
- 8 $\frac{1}{16}$	5 $\frac{1}{16}$	3	Gurhwal . . .	Lieut.-Col. L. L. Fenton.
8 $\frac{1}{2}$	4 $\frac{3}{4}$	4	Pir Panjal . . .	Capt. N. C. Taylor.
8 $\frac{1}{2}$	5 $\frac{1}{4}$	4 $\frac{1}{2}$	Kashmir . . .	Col. R. Pole Carew, C.B.
8 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{4}$	Ranikhet . . .	D. R. Napier.
8	4 $\frac{3}{4}$	4 $\frac{3}{4}$	Near Darjiling . . .	R. Lydekker, British Museum.
9 7 $\frac{1}{2}$	5	2 $\frac{1}{2}$	Gangutri . . .	Col. R. J. Heber-Percy.
7 $\frac{1}{2}$	4 $\frac{8}{8}$	3	?	Dr. W. P. Y. Bainbrigge.

BURMESE SEROW (*Nemorhædus bubalinus sumatrensis*).

Although commonly regarded as a distinct species, there can be little hesitation in classing this animal as a local race of the last, more especially as intermediate forms appear to occur in the neighbourhood of Darjiling. The chief distinction is the more decidedly rufous tint of the hair of the eastern race. Height at shoulder about $34\frac{1}{2}$ inches.

Distribution.—From the Eastern Himalaya, Moupin in Tibet, and Yunnan, to Sumatra, occurring throughout the Assam Hills, Burma, Siam, and the elevated tracts of the Malay Peninsula.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
9.25	5	2.75	Garro Hills . . .	A. O. Hume, C.B.
-9.5	5	5.5	Arakan Hills . . .	Do.
9	$5\frac{1}{2}$	5	Burma . . .	The late A. G. Trapmann.
9	5	2	Sumatra . . .	Hume Collection, British Museum.
-9	5	5	Burma . . .	Vet.-Capt. G. H. Evans.
-9	...	...	Arakan Hills . . .	Indian Museum.
$8\frac{3}{4}$	$5\frac{1}{2}$	$4\frac{1}{2}$	? . . .	Hume Collection, British Museum.
$8\frac{3}{4}$	5.5	$4\frac{3}{4}$	Muleyit . . .	A. O. Hume, C.B.
- $8\frac{3}{4}$	$4\frac{7}{8}$	$2\frac{1}{2}$	Perak . . .	Perak Museum.
- $8\frac{1}{2}$	$5\frac{1}{8}$	6	Burma . . .	Vet.-Capt. G. H. Evans.
$8\frac{1}{2}$	5	$3\frac{1}{2}$	Upper Burma . . .	Hon. Walter Rothschild.
- $8\frac{1}{8}$	$5\frac{1}{8}$	$5\frac{1}{4}$	Perak . . .	Perak Museum.
$7\frac{3}{4}$	$4\frac{7}{8}$	$4\frac{1}{4}$	Assam . . .	A. M. Long.
$7\frac{1}{2}$	$4\frac{3}{4}$	5	? . . .	Duke of Bedford.
- $7\frac{1}{8}$	$4\frac{7}{8}$	$3\frac{7}{8}$	Garro Hills . . .	Dr. Percy Rendall.
$5\frac{7}{8}$	$3\frac{3}{4}$	$3\frac{7}{8}$	Moulmein, Tenasserim	The late Capt. R. C. Beavan, British Museum.

Skull and Horns of Male Takin. From Col. J. Biddulph's record specimen.

TAKIN (*Budorcas taxicolor*).

Although recently suggested to be related to the musk-ox, this strange ruminant is more generally regarded as an aberrant relative of the serows. It is heavily built, with stout limbs, large lateral hoofs, a short tail, a convex profile, and an almost completely hairy muzzle. But its most remarkable feature is to be found in the horns, which are large, massive, and bent somewhat after the fashion of those of a gnu, curving at first outwards and somewhat downwards, and then bending abruptly upwards about the middle of their length. Height at shoulder about $3\frac{1}{2}$ feet. Horns are present in both sexes, as in the serows and gorals, those of the female measuring about a foot in length, and lacking the curvature of those of the males.

Distribution.—Typically the Mishmi Hills on the northern frontier of Assam, but represented by a variety or allied species in Tibet, and perhaps a third in China. Although living within sight of Indian territory, it does not appear that takin have ever been killed by English sportsmen; and specimens are very rare in collections.

TAKIN (*Budorcas taxicolor*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-24 $\frac{1}{2}$	..	...	Mishmi Hills . .	Col. J. Biddulph. (See illustration.)
-24.25	12.75	12.75	Do. . .	Indian Museum.
22 $\frac{3}{8}$	10 $\frac{1}{8}$	14 $\frac{3}{4}$	Assam . .	British Museum.
-22.5	13.5	10.75	Mishmi Hills . .	Indian Museum.
-22	12 $\frac{3}{4}$	12 $\frac{1}{2}$	Do. . .	Bombay Natural History Society's Museum.
21 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{3}{4}$	Do. . .	Dr. Percy Rendall.
21	12	13 $\frac{1}{2}$	Do. . .	A. J. Walter.
20 $\frac{7}{8}$	11 $\frac{3}{8}$	11 $\frac{1}{2}$	Assam . .	Hume Collection, British Museum.
20 $\frac{7}{8}$	11 $\frac{1}{8}$	12 $\frac{1}{2}$	Mishmi Hills . .	A. O. Hume, C.B.
20 $\frac{7}{8}$	10	12 $\frac{1}{8}$	Do. . .	Hon. Walter Rothschild.
20 $\frac{1}{2}$	10 $\frac{7}{8}$	12 $\frac{3}{8}$	? . .	The late B. H. Hodgson, British Museum.
19 $\frac{3}{4}$	11	11 $\frac{1}{2}$	Mishmi Hills . .	Col. J. Biddulph.
19 $\frac{3}{8}$	11	15	? . .	Sir Edmund G. Loder, Bart.
-19	...	..	? . .	Capt. E. T. Dalton, Indian Museum.
18	10 $\frac{1}{2}$	8	? . .	British Museum.
15 $\frac{1}{2}$	9 $\frac{1}{8}$	5 $\frac{3}{4}$	Mishmi Hills . .	The late B. H. Hodgson, British Museum.
14 $\frac{3}{8}$	8 $\frac{3}{4}$	8 $\frac{1}{2}$	Upper Assam . .	Lieut.-Col. Graham.
9 10 $\frac{1}{4}$	8	13	Mishmi Hills . .	A. O. Hume, C.B. (See illustration.)

Frontlet and Horns of Female Takin. From A. O. Hume's specimen.

TIBETAN TAKIN (*Budorcas taxicolor tibetanus*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-19½	11½	13½	Tibet	Père A. David, Paris Museum.

KANSU TAKIN (*Budorcas taxicolor sinensis*).

20½	11½	11½	Kansu, China . .	Hon. Walter Rothschild.
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ROCKY MOUNTAIN GOAT (*Haploceros montanus*).

This is one of the very few mammals that are permanently white or whitish at all seasons; and although commonly termed a goat, it really belongs to the same group as the serows, which it closely resembles in the form and colour of the horns. In winter the hair is very long and pure white in colour; along the back it is erect, and much elongated on the withers and haunches, so as to give to the animal the appearance of possessing a pair of humps. The summer coat is comparatively short, and has a yellowish tinge. Height at shoulder just short of 3 feet; weight from 180 to 300 lbs.

Distribution.—North America; throughout the Rocky Mountains, from about lat. 36° in California at least as far north as lat. 60°. By American naturalists the proper generic name of the animal is considered to be *Oreamnos* instead of *Haploceros*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-11½	...	...	British Columbia .	Clive Philipps-Wolley.
-11	...	...	Kutenay, B.C. . .	John T. Fannin (measured by).
-10½	5½	...	Montana	Walter James.
10½	5½	5½	British Columbia .	R. Rankin.
-10½	6½	...	Similkameen River, British Columbia	Arthur Pearse.
10½	5	6½	?	E. N. Buxton.
-9 10½	4½	...	British Columbia .	Capt. A. Egerton.
10	5½	6½	Do. . . .	J. V. Colby.
-9½	5	...	Montana	Theodore Roosevelt.
9½	5½	6½	N.W. Territories .	S. Ratcliff.
9½	5½	6	Do. . . .	H.R.H. le Duc d'Orleans.
9½	5½	6½	Do. . . .	Sir Edmund G. Loder, Bart.

ROCKY MOUNTAIN GOAT (*Haploceros montanus*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
9½	5½	6½	Alaska . . .	St. George Littledale.
9½	4½	...	North America . . .	J. D. Cobbold.
9 9½	4½	5½	British Columbia .	P. B. Vander-Byl.
9½	5½	6½	East Kutenay, British Columbia	A. E. Butter.
-9½	5½	6½	Bitter Root Mts., U.S.A.	James J. Harrison.
-9 9½	4½	5½	British Columbia	A. E. Leatham.
9½	5½	6½	Do. . . .	T. W. H. Clarke.
9½	5½	5½	Do. . . .	J. Turner-Turner.
9½	5½	...	North America .	Earl of Lonsdale.
9½	5½	5½	British Columbia .	G. Lloyd Graeme.
9½	...	6	Montana . . .	Thomas Bate, British Museum.
9½	5½	5	British Columbia .	Sir Peter Walker, Bart.
9	4½	6	Do. . . .	T. P. Kempson.
-8½	5½	4½	Do. . . .	Count E. Hoyos.
8½	4½	5½	Do. . . .	Count Scheibler.

Head of Rocky Mountain Goat.

From a specimen shot by Sir Edmund G. Loder, Bart.

Head of Male Himalayan Tahr.

HIMALAYAN TAHR (*Hemitragus jemlaicus*).

The three species of tahr are the first representatives of that great group of ruminants which also includes the true goats and sheep. In all these animals horns are, as a rule, present in both sexes, and are generally more or less distinctly angulated; while the cheek-teeth have tall and narrow crowns like those of the serows, which the tahr serve to connect with the true goats. From the latter tahr are readily distinguished by the small size of their horns, which exceed but little in length the head, as well as by the absence of a beard on the chin of the males. The Himalayan tahr is easily recognised by the great length of the hair of the body, which, although in museum specimens generally combed straight, is very shaggy in nature; and likewise by the form of the horns, which have a knotted sharp keel in front. Height at shoulder from 36 to 40 inches; weight about 200 lbs. Mr. Wilson, "Mountaineer," had a pair of horns, length 16.5 and girth 10.5, which Mr. A. O. Hume measured.

Distribution.—The Himalaya, from Bhutan to Kashmir.

HIMALAYAN TAHR (*Hemitragus jemlaicus*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-14 $\frac{3}{4}$	...	...	Chamba	A. H. Ogilvy Spence.
-14 $\frac{5}{8}$	...	...	?	H. Vansittart.
14 $\frac{2}{5}$	8 $\frac{3}{4}$	...	Chamba	J. S. Rivett-Carnac.
-14 $\frac{1}{2}$	9 $\frac{3}{4}$	6 $\frac{3}{4}$	Do.	A. H. Ogilvy Spence.
14 $\frac{1}{2}$	8 $\frac{7}{8}$	4 $\frac{8}{8}$	?	A. Cadell.
14 $\frac{1}{8}$	8 $\frac{7}{8}$	6 $\frac{5}{8}$	Kumaon	A. O. Hume, C.B.
-14 $\frac{1}{8}$	...	...	?	A. B. Lindsay.
14	...	...	?	Capt. R. L. Tottenham.
-14	...	...	?	Major A. E. Ward.
13 $\frac{7}{8}$	9	8 $\frac{8}{8}$	Chamba	Hugo de Burgh.
13 $\frac{7}{8}$	...	...	Do.	Col. R. J. Heber-Percy.
13 $\frac{3}{4}$	9	11 $\frac{1}{4}$	?	Hume Collection, British Museum.
13 $\frac{3}{4}$	8 $\frac{8}{8}$	6 $\frac{7}{8}$	Danpur, Kumaon . .	A. O. Hume, C.B.
13 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{3}{4}$	?	I. Morse.
13 $\frac{5}{8}$	8	6 $\frac{1}{4}$	?	Hume Collection, British Museum.
-13 $\frac{1}{2}$	10	...	?	Major C. F. Blane.
13 $\frac{5}{8}$	9 $\frac{1}{8}$	5 $\frac{3}{4}$	?	Hon. Walter Rothschild.
13 $\frac{1}{2}$	8 $\frac{7}{8}$	5 $\frac{3}{4}$	?	Sir Victor Brooke's Collection.
13 $\frac{1}{2}$	8 $\frac{1}{4}$	6 $\frac{7}{8}$	Nepal (?)	Sir Edmund G. Loder, Bart.
13 $\frac{1}{2}$	8 $\frac{1}{2}$	...	?	E. L. Phelps.
-13 $\frac{1}{2}$	9	5	?	P. H. G. Powell-Cotton.
-13	9	...	?	Indian Museum.
-13	9 $\frac{3}{4}$	...	Chamba	Capt. A. Hicks-Beach.
-13	9 $\frac{1}{4}$	...	Himalaya	Major-General Alexander A. A. Kinloch.
-12 $\frac{3}{4}$	...	...	Chamba	Col. R. J. Heber-Percy.
-12 $\frac{3}{4}$	9	7 $\frac{3}{4}$	Do.	H. L. S. MacLean, Officers' Mess, Queen's Own Corps of Guides.
12 $\frac{1}{2}$	8 $\frac{1}{2}$	10	?	The late J. E. Ubsdell.
12 $\frac{1}{2}$	8 $\frac{7}{8}$	4 $\frac{3}{4}$	?	Sir Robert Harvey, Bart.
12 $\frac{1}{2}$	8 $\frac{1}{4}$	6 $\frac{1}{2}$	?	H.R.H. the Duke of Saxe-Coburg and Gotha.

Skull and Horns of Male Arabian Tahr. (From Thomas, *P.Z.S.* 1894.)

ARABIAN TAHR (*Hemitragus jayakeri*).

A much smaller and rather shorter-haired species than the last, of a generally tawny brown colour, with relatively longer and more slender horns, which are less boldly knotted on the front edge. Height at shoulder about $24\frac{1}{2}$ inches.

This species, of which the type specimen is in the British Museum, was first obtained by Dr. A. S. G. Jayakar, in honour of whom it was named by Mr. O. Thomas in 1894.

Distribution.—Jebel Taw, and probably some of the other ranges of Oman, in South-East Arabia.

Length on front curve.	Locality.	Owner.
—11½	Oman Mountains . . .	Surgeon Lieut.-Col. A. S. G. Jayakar.



Head of Male Nilgiri Tahr.

NILGIRI TAHR (*Hemitragus hylocrinus*).

Although commonly designated by British sportsmen the "Nilgiri ibex," this species (the warriattu of the native shikaris) is really a member of the same genus as the Himalayan tahr. From that species it is at once distinguished by its short hair and the form of the horns; the latter having the outer surface convex instead of flat, and lacking the knotted front keel. The general colour is dark blackish-brown, old males developing a light saddle-like patch on the back. Height at shoulder from 39 to 42 inches in the males, and up to 35 inches in the females.

Distribution.—The hill-ranges of Southern India, including the Nilgiris, Anamalais, and the Western Ghats nearly to Cape Comorin; usually at elevations of from 4000 to 6000 feet, but occasionally descending to lower levels. This interesting species has been greatly reduced in numbers by constant persecution, but as the herds have now been placed under Government protection, and a special permit is necessary for shooting, there is hope that it may shortly increase.

NILGIRI TAHR (*Hemitragus hylocrius*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-17.5	9.9	6	Nilgiris . . .	Rhodes Morgan.
-17	9 $\frac{3}{4}$	...	Do. . . .	Measured by General MacMaster, 1869.
16 $\frac{3}{4}$	8 $\frac{3}{4}$	5 $\frac{3}{8}$	?	A. O. Hume, C.B.
-16 $\frac{1}{2}$	...	...	Nilgiris . . .	St. George Littledale.
16 $\frac{1}{2}$	8 $\frac{1}{4}$	6	Do. . . .	S. G. Bird.
-16	9.5	5	Do. . . .	Rhodes Morgan.
15 $\frac{1}{2}$	8 $\frac{1}{2}$	7 $\frac{7}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.
15 $\frac{3}{8}$	8 $\frac{3}{4}$	6 $\frac{3}{4}$	Do. . . .	Martyn Kennard.
15 $\frac{3}{8}$	8 $\frac{1}{4}$	6	Do. . . .	St. George Littledale.
15 $\frac{1}{8}$	8 $\frac{3}{8}$	4 $\frac{3}{4}$	Do. . . .	Martyn Kennard.
15 $\frac{1}{8}$	8 $\frac{3}{8}$	4 $\frac{3}{8}$	Do. . . .	St. George Littledale.
-15	8 $\frac{1}{2}$	5 $\frac{1}{8}$	Do. . . .	Sir H. D. Tichborne, Bart.
14 $\frac{3}{4}$	8 $\frac{1}{2}$	5 $\frac{3}{8}$	Do. . . .	Capt. C. S. Timins.
14 $\frac{3}{4}$	8 $\frac{3}{8}$	5 $\frac{1}{2}$	Do. . . .	R. A. Sterndale.
14 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{1}{4}$	Do. . . .	M. Loam.
14 $\frac{1}{2}$	8 $\frac{3}{4}$	6 $\frac{1}{4}$	Do. . . .	British Museum.
14 $\frac{1}{2}$	8 $\frac{3}{8}$	5 $\frac{1}{8}$	Do. . . .	Sir Victor Brooke's Collection.
14 $\frac{3}{8}$	8	4 $\frac{3}{8}$	Anamalai Hills . . .	T. W. Greenfield.
-14 $\frac{1}{4}$	8 $\frac{1}{4}$	4	Travancore . . .	J. D. Inverarity.
-14 $\frac{1}{4}$	8	4 $\frac{1}{2}$	Do. . . .	A. E. Leatham.
14	7 $\frac{3}{4}$	5	Do. . . .	Capt. Hon. E. Baring.
14	7 $\frac{3}{4}$	6 $\frac{1}{2}$	Do. . . .	Major G. S. Rodon.
14	7 $\frac{3}{8}$	6 $\frac{3}{8}$	Do. . . .	Col. J. Biddulph.
♀ 12 $\frac{3}{8}$	5 $\frac{1}{2}$	2 $\frac{3}{8}$	Anamalai Hills . . .	M. Loam.
♀ 11 $\frac{3}{4}$	5 $\frac{3}{4}$	4 $\frac{1}{8}$	Do. . . .	Hon. Walter Rothschild.
♀ 11.25	5.25	4	Do. . . .	A. O. Hume, C.B.
♀ 11 $\frac{1}{8}$	5 $\frac{3}{4}$	...	Travancore . . .	Col. Hon. Francis C. Bridgeman.
♀ 10	5 $\frac{3}{4}$	4	Nilgiris . . .	St. George Littledale.
♀ 9 $\frac{3}{4}$	...	...	Do. . . .	Indian Museum.
♀ 9 $\frac{3}{4}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	Do. . . .	Lieut.-Col. Hon. W. Coke.

Horns of Pir Panjal Markhor.
Shot by Major J. C. Shirres, in the Kajrag, April 22, 1884.

ASTOR and the PIR PANJAL MARKHOR

(*Capra falconeri typica*, and *C. falconeri cashmiriensis*).

The markhor, of which there are four local races, probably passing more or less completely into one another, introduces us to the true goats (*Capra*). The males differ from the tahr by their much larger horns, whose length greatly exceeds that of the head, and likewise by the presence of a more or less distinct beard on the chin. In all the varieties of the markhor the beard is extended so as to form a fringe on the throat and chest; the hair on the body being also elongated. Moreover, the horns form a spiral, quite unlike the scimitar-shape characteristic of the ibex and common goat. In the Astor (*C. falconeri typica*) and Pir Panjal (*C. falconeri cashmiriensis*) races of the markhor the horns take the form of an open corkscrew-like spiral, with comparatively few turns, recalling those of the kudu; the spiral being most open, the spread widest, and the turns fewest in the Astor variety. Height at shoulder of a Gilgit specimen, $38\frac{1}{2}$ inches; of Kashmir specimens, from 38 to 41 inches; weight from

about 200 to 240 lbs. The Astor race is found in Astor and Baltistan, while the Pir Panjal variety inhabits the Pir Panjal and Kajnag ranges of Kashmir, and extends to the north-west into Hazara and Gilgit, where it probably intergrades with the former.

Horns of Astor Markhor. From A. O. Hume's specimen.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-63	.	.	..	?	Major-General Alexander A. A. Kinloch. ¹
-60	...	.	...	Astor . . .	Lucknow Museum.
-59	.	12	36	Kajnag . . .	Major J. C. Shirres, D.S.O. (See illustration on p. 333.)
-59	..	.	.	Pir Panjal . . .	Lucknow Museum.
-58½	40½	10	38½	Gilgit . . .	Marquis of Lansdowne, K.G., K.C.M.G.
-56½	38	11	38	Kashmir . . .	J. Bennett-Stanford.
-56	..	...	...	Astor . . .	Capt. H. Trevor.
-56	36½	13½	34½	Do. . . .	Viscount Edmond de Pon- cins.
55	44½	11	47	?	East India Club.

¹ Picked up either on the Pir Panjal or Kajnag Ranges by the late Col. Cuppage, and measured by Major-General Alexander A. A. Kinloch.

ASTOR and the PIR PANJAL MARKHOR
(*Capra falconeri typica* and *C. falconeri cashmiriensis*)—continued.

Length. On outside curve.	Straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-55	...	...	...	Astor . . .	Otho Shaw.
54½	...	10½	26½	?	A. O. Hume, C.B.
54	...	10½	33½	Astor . . .	Martyn Kennard.
53½	42½	11½	52 about	Do. . . .	Sir Victor Brooke's Collec- tion. ¹
53	36½	10½	30½	?	A. O. Hume, C.B. (See illustration on page 337.)
-53	...	9½	26	?	Major A. E. Ward.
53	38½	9½	35½	Gilgit . . .	Hon. Walter Rothschild.
52½	39½	12½	33½	Astor . . .	Martyn Kennard.
52	35	9½	42½	Gilgit . . .	Major F. H. Taylor.
51½	37½	10	33	Pir Panjal . . .	Sir Edmund G. Loder, Bart.
51½	...	11½	49½	Astor . . .	Martyn Kennard.
-51½	...	12	44½	Haramosh . . .	P. H. G. Powell-Cotton.
50	38	11½	36	Astor . . .	Sir Edmund G. Loder, Bart.
50	36	10	33	Chitral . . .	R. H. Macdonald.
50	36½	12	36	Chilas . . .	Capt. W. Hayes-Sadler.
50	...	11½	35½	Astor . . .	Martyn Kennard.
-50	...	...	...	Do. . . .	Capt. H. V. Oliver.
-50	29	11½	31	Haramosh . . .	E. L. Phelps.
-49½	...	11½	40	Astor . . .	H. Lennard.
-49½	32½	10½	43	Gilgit . . .	Col. J. Biddulph.
-49½	35	10	37½	Kajnag . . .	P. H. G. Powell-Cotton.
49½	36	11½	32	Chilas . . .	L. W. S. Oldham.
-49	39½	11½	...	Chitral . . .	C. R. Johnson.
-49	...	11	35	Haramosh . . .	Capt. H. W. Codrington, Officers' Mess, Q.O. Corps of Guides.
49	35	14	44	?	A. O. Hume, C.B. (See illustration on page 334.)
-49	...	...	42	Astor . . .	Otho Shaw.
48½	...	11½	45	Do. . . .	Capt. M. Murphy.

¹ Shot by Capt. Harry V. Brooke.

ASTOR and the PIR PANJAL MARKHOR
(Capra falconeri typica and C. falconeri caashmiriensis)—*continued.*

Skull and Horns of Pir Panjal Markhor. From A. O. Hume's specimen.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
48½	31½	11½	26½	Baltistan . .	H. Z. Darrah.
48	37½	12½	29	Pir Panjal . .	A. O. Hume, C.B. (See above illustration.)
48	31½	12	38	Haramosh . .	J. V. Phelps.

ASTOR and the PIR PANJAL MARKHOR

(Capra falconeri typica and C. falconeri cashmiriensis)—*continued*.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
47½	..	11	.	Kashmir . . .	Major-Gen. Alexander A. A. Kinloch.
47½	37	12½	38	Chilas . . .	L. W. S. Oldham.
47	36	11½	39	Do. . . .	Sir Victor Brooke's Collec- tion.

Horns of Variety of Pir Panjal Markhor. From A. O. Hume's specimen.

47	34½	12	40	Pir Panjal . . .	Dr. W. P. Y. Bainbrigge.
47		11	32	Rondu, Baltistan .	F. W. H. Walshe.
47		11½	..	Indus Valley . . .	Captain H. M. Biddulph.
46½		11½	Odd horn	Astor Valley .	British Museum.

ASTOR and the PIR PANJAL MARKHOR

(Capra falconeri typica and C. falconeri cashmiriensis)—continued.

On outside curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight line.					
—...	34	...	...	?		Maharaja of Travancore, G.C.S.I.
46	31½	10	35	Bunji . . .		Col. F. C. Lister-Kay.
46	33½	10	34½	Kajnag . . .		Sir Edward Ion Grogan, Bart.
45½	...	11½	37½	Chilas . . .		Major C. S. Cumberland.
—45	...	...	...	Kajnag . . .		Otho Shaw.
45	35½	11	36	Haramosh . . .		P. Church.
43½	...	10½	32½	Kashmir . . .		Hon. Charles Ellis.
43½	32½	12	38½	Do. . . .		I. Morse.
43	31	9½	28	Baltistan . . .		Major C. H. Hayes.
—43	...	9½	30	Do. . . .		Capt. T. A. Salt.
—43	20½	13	35	Astor		E. L. Phelps.
42½	...	12	32½	Kashmir . . .		Sir Robert Harvey, Bart.
42½	32½	11½	32½	Astor		Hon. Walter Rothschild.
42	31	11½	32	Pir Panjal . . .		W. R. Lawrence.
—42	36	11½	...	Chitral		C. R. Johnson.
41½	...	10	30½	Gilgit		St. George Littledale.
41	...	12½	42½	Indus Valley . . .		Capt. M. Murphy, British Museum.
41	...	10	27½	Pir Panjal . . .		R. Lydekker, British Museum.
39½	31½	11	37	?		P. W. Cobbold.
39½	29	11	27½	Baltistan		Major H. C. Morland.
—37½	...	12	33	Kashmir		Dublin Museum.
37½	27½	11	35½	Do. . . .		Major A. Nugent.
♀ 16½	13½	5½	13	Astor		Martyn Kennard.

Head of Suleman Markhor. From A. J. Grant's Waziristan specimen.

CABUL and SULEMAN MARKHOR

(*Capra falconeri megaceros* and *C. falconeri jerdoni*).

In the Cabul race of the markhor (*C. falconeri megaceros*), from the trans-Indus districts near Cabul, the horns are nearly straight, but show a slightly open spiral, being intermediate between those of the Pir Panjal and Suleman races. On the other hand, in the latter (*C. falconeri jerdoni*) the relatively small horns form a perfectly straight cone, upon which the spiral ridges run like the "worm" of a screw. The distributional area of the latter race includes the trans-Indus hill-ranges on the frontier of the Punjab, Afghanistan, and Baluchistan,

extending in the Suleman range as far as Mithankot, and also to the Quetta district.

Length in straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
48½	7½	Odd horn Suleman race	?	British Museum.
39½	10½	24½	Afghanistan . .	The late Col. Grant, British Museum.
39½	12½	38	Mountain range 25 miles N.W. of Wana	A. J. Grant. (See illustration, page 340.)
38½	10½	23½	Afghanistan . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
37	10	32	?	Capt. G. Roos Keppel.
¹ 35½	10	25	Baluchistan . .	Col. J. Biddulph.
-35	...	...	Afghanistan . .	Major A. E. Ward.
34½	10½	28	Baluchistan . .	The late Capt. E. W. Codrington.
33	9½	19½	Afghanistan . .	Sir Edmund G. Loder, Bart.
32½	10	22½	Bunu . .	Officers' Mess, Queen's Own Corps of Guides.
32½	9½	28	?	A. O. Hume, C.B.
32	10	27½	Cabul . .	A. O. Hume, C.B. (See illustration on page 338.)
31½	9½	27	Suleman Range . .	Hon. Walter Rothschild.
30½	8½	21½	?	Sir Victor Brooke's Collection.
29½	8½	23½	Baluchistan . .	Major R. H. Rattray.
29	9	21	Do. . .	The late Capt. E. W. Codrington.
-28	...	...	?	Otho Shaw.
27½	8½	21	Sheik Budin . .	Sir Edmund G. Loder, Bart.
27	9	18	Do. . .	Col. J. Biddulph.
26.75	11.25	22.5	Suleman Range . .	A. O. Hume, C.B. (See illustration on page 338.)
26½	...	18	Bunu . .	Capt. H. W. Codrington.
26	8½	18½	Sheikh Budin . .	Gen. Sir H. Collett, K.C.B.
26	9	16½	Bunu . .	Capt. H. W. Codrington.
24	9½	20	?	G. Blois Johnson.
-24	...	...	Sheikh Budin . .	Major-General Alexander A. A. Kinloch.
22½	10½	15½	East Afghanistan . .	J. E. Penton.

¹ Straight line 30½.

Head of Himalayan Ibex. From H. Z. Darrah's specimen.

ASIATIC IBEX (*Capra sibirica*).

The first of the true ibexes, in all of which the long scimitar-shaped horns carry bold transverse knots on the front surface. In the present species the horns are characterised by their large size and well-developed front surface; the second distinctive feature being the long beard of the males. Height at shoulder from 40 to 42 inches; weight about 206 lbs., when cleaned from 128 to 153 lbs.

Distribution.—The mountains of Central Asia, from the Altai to the Himalaya (exclusive of the Pir Panjal), and from the neighbourhood of Herat to Kumaon. Apparently two races of this species, distinguished by the coloration of the lower part of the legs, may be recognised; namely, the Thian Shan ibex (*C. sibirica typica*), from the Thian Shan, Altai, Baltistan, etc.; and the Himalayan ibex (*C. sibirica sacin*), from the mountains to the northward of Kashmir and adjacent districts as far east as the source of the Ganges.

ASIATIC IBEX (*Capra sibirica*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-56	...	...	Tagdumbash . . .	Major A. E. Ward.
-54 $\frac{3}{4}$	10 $\frac{1}{4}$	25	Gilgit . . .	Officers' Mess, Queen's Own Corps of Guides. ¹
53 $\frac{1}{4}$	10 $\frac{1}{2}$	20 $\frac{1}{4}$	Do. . . .	Col. J. Biddulph.
52	11 $\frac{1}{2}$	...	Do. . . .	Major A. E. Ward.
-52	10	...	Baltistan . . .	Maharaja of Travancore, G.C.S.I.
-52	...	...	?	The late E. Blyth, <i>P.Z.S.</i> 1840, p. 80.
-51 $\frac{1}{2}$	...	...	Kashmir . . .	Martyn Kennard.
51 $\frac{1}{4}$	10 $\frac{1}{2}$	16	?	The late E. Blyth, <i>P.Z.S.</i> 1840, p. 80.
51	9 $\frac{1}{4}$	28 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
-50	11	30 $\frac{1}{2}$	?	Marquis of Lansdowne, K.G., K.C.M.G.
-50	10 $\frac{1}{4}$	21	?	Capt. H. Newton.
-50	...	...	?	Capt. H. Trevor.
-50	...	...	?	Officers' Mess, 7th Hussars.
49 $\frac{3}{4}$	10 $\frac{3}{4}$	25 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
49 $\frac{1}{2}$	10 $\frac{1}{2}$	42	Kashmir . . .	Martyn Kennard.
-49 $\frac{1}{2}$	11 $\frac{1}{4}$	27 $\frac{1}{2}$	Baltistan . . .	Major James Grant.
49	10 $\frac{1}{4}$	9 $\frac{1}{2}$	Skardo . . .	Major George Douglas.
-48 $\frac{1}{2}$	9 $\frac{3}{4}$	34 $\frac{1}{2}$	Gilgit . . .	Officers' Mess, Queen's Own Corps of Guides.
48 $\frac{1}{2}$	9 $\frac{1}{4}$	30 $\frac{1}{2}$	Nubra valley, north of Leh	A. O. Hume, C.B.
-48	...	...	Skardo . . .	J. L. Wood.
48	10 $\frac{1}{2}$	24 $\frac{1}{2}$	Tiel Valley, Kashmir	J. Campbell of Kilberry.
-47 $\frac{1}{4}$	...	...	Thian Shan . . .	F. A. Labouchere.
-47.5	9.5	20.5	Mushral, Nr. Khoga .	A. O. Hume, C.B.
47	11 $\frac{3}{4}$	...	?	Carl Hagenbeck.
-47	...	...	Baltistan . . .	Major E. Guinness.
47	10 $\frac{1}{2}$	29 $\frac{3}{4}$	Kashmir . . .	Martyn Kennard.
47	10	...	?	Capt. J. Manners Smith, V.C.
-47	...	...	Baltistan . . .	A. R. Oldfield.
46 $\frac{1}{2}$	11	24 $\frac{3}{4}$	Kashmir . . .	Hon. Charles Ellis.

¹ Picked up by Lieut.-Col. R. E. Hutchinson.

ASIATIC IBEX (*Capra sibirica*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-46½	...	...	?	Indian Museum.
46	9½	25	?	Sir Victor Brooke's Collection.
-46	11½	27	Sind Valley . . .	A. O. Hume, C.B.
-46	...	...	Kashmir . . .	Capt. Hon. J. G. Beresford.
-45½	9½	24½	Baltistan . . .	Capt. H. W. Codrington, Officers' Mess, Queen's Own Corps of Guides.
45	10½	29	Ladak . . .	P. H. G. Powell-Cotton.
45	10½	26	Astor . . .	Capt. F. C. Quicke.
-45	10	20½	Gilgit . . .	Col. J. Biddulph.
-45	...	...	Kashmir . . .	Major R. L. Walter.
45	9	12½	Baltistan . . .	Capt. C. B. Vandeleur.
-44½	...	...	Do. . .	Hon. C. B. Fulke-Greville.
44½	10½	30	Upper Shyok Valley .	A. O. Hume, C.B.
44½	11½	26	?	Major J. A. Orr-Ewing.
44½	11	19	?	J. Benett-Stanford.
-44½	...	...	Kashmir . . .	Major G. A. L. Carew, D.S.O.
44½	9½	27½	Astor . . .	The late Capt. E. W. Codrington.
44½	10	34	Ladak . . .	Lieut.-Col. H. Wade-Dalton.
-44	...	...	Baltistan . . .	E. Ezra.
-44	...	...	Do. . .	C. H. Rankin.
43½	9½	16½	Kashmir . . .	S. V. Occleston.
43½	10½	24½	?	Sir. Robert Harvey, Bart.
-43½	9½	19	?	Hume Collection, British Museum.
-43½	...	...	Astor . . .	Otho Shaw.
-43½	11½	...	Himalaya . . .	Major-General Alexander A. A. Kinloch.
-43½	10	31½	Altai . . .	H. J. Elwes.
43½	9½	18½	Kashmir . . .	Capt. M. S. Wellby.
43½	9½	23	Do. . .	Dr. W. P. Y. Bainbrigge.
43½	...	...	Baltistan . . .	J. Vaughan.
-43½	11	...	?	Maharaja of Travancore, C.C.S.I.

ASIATIC IBEX (*Capra sibirica*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-43½	...	...	Haramosh . . .	A. R. Oldfield.
-43½	10¾	22½	Do. . . .	J. V. Phelps.
43½	9½	...	Mustagh Range . .	Capt. F. E. S. Adair.
43	12½	35½	Basha Nalla, Baltistan	T. W. Greenfield.
43	11	10	?	Major J. Harden.
43	10	9	?	E. F. Holden.
43	9¾	28½	?	R. Rankin.
-43	...	...	?	Lucknow Museum.
42¾	10	25½	Baltistan . . .	P. S. Allan.
-42¾	10¾	24	Haramosh . . .	J. V. Phelps.
42½	8¾	21	Baltistan . . .	H. Z. Darrah.
42½	10½	22	Kashmir . . .	Col. R. J. Heber-Percy.
42½	9½	21½	?	Arnold Pike.
-42½	10½	27	Astor	E. L. Phelps.
-42½	9½	...	Mongolia . . .	J. D. Cobbold.
42	9¼	26	Ladak	Lieut.-Col. H. Wade-Dalton.
-42	...	...	Kashmir . . .	The late Major W. D. B. Fenton.
-42	...	...	Baltistan . . .	F. W. Wormold.
-41¾	10	...	Do. . . .	Capt. H. M. Biddulph.
-41¾	9¾	19½	Haramosh . . .	E. L. Phelps.
-41½	10½	20½	Skardo	Major G. Douglas.
41½	9	21	Chitral	Capt. R. L. Tottenham.
41	10½	26¾	?	Capt. J. H. Purvis.
-41	10¼	14	Baltistan . . .	Major H. R. Kelham.
41	9¼	26½	Shyok Valley . .	Capt. F. E. S. Adair.
41	11½	25½	Baltistan . . .	V. F. A. Keith-Falconer.
41	9¾	24	Do. . . .	Major A. Nugent.
41	9½	12	Do. . . .	W. J. M'Lachlan.
40¾	10½	22½	Do. . . .	Major C. H. Hayes.
40½	10¾	33¾	?	Sir Edmund G. Loder, Bart.

ASIATIC IBEX (*Capra sibirica*)—*continued*.

Length on front curve	Circum- ference.	Tip to Tip.	Locality.	Owner.
40½	10	20½	?	A. C. Hall.
40½	11¼	21½	?	Hon. Charles Ellis.
40½	10½	19	Altai . . .	Prince Demidoff.
40	10½	29¼	Baltistan . . .	Major C. S. Cumberland.
40	10	30	Chilas . . .	L. W. S. Oldham.
40	9½	20	?	Dublin Museum.
40	9¾	20¾	Kandgut . . .	Viscount Edmond de Poncins.
40	9¼	22¼	?	Viscount Fincastle, V.C.
40	10	9¼	?	H. De Prée.
40	9¾	23	Kashgar . . .	R. P. Cobbold.
40	9	29½	Kashmir . . .	B. Vincent.
39¾	9	21¾	Mongolia . . .	St. George Littledale.
39½	10½	29¾	Kashmir . . .	Capt. N. C. Taylor.
39½	10	21¾	Ladak . . .	W. R. Codrington.
39½	9½	22½	Do. . .	Col. Strachey, British Museum.
39½	9½	14¾	Thian Shan . . .	Col. J. Biddulph.
39½	9¾	23	Baltistan . . .	Capt. W. E. Gordon.
39½	9¾	13	?	J. R. Carden.
39½	12	28	Kashmir . . .	J. Benett-Stanford.
39	10½	27½	?	Capt. L. I. B. Hulke.
39	9¾	20	Kashmir . . .	Earl of Dunmore.
39	9¼	17	Do. . .	A. Leslie Renton.
38½	10	21½	Do. . .	S. Melville.
38¼	10½	19	Do. . .	E. Langworthy.
38¼	10¾	22½	Do. . .	Hon. Walter Rothschild.
38	9½	16	?	David T. Hanbury.
38	10	27	Altai . . .	Prince Demidoff.
37½	10½	21	?	Duke of Portland.
35¾	9	11	Saiar Mountains, Altai	St. George Littledale, British Museum.
33½	9	21	Altai . . .	St. George Littledale.

ASIATIC IBEX (*Capra sibirica*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-27 $\frac{7}{8}$	8 $\frac{3}{4}$	9 $\frac{7}{8}$	Russian Turkestan . . .	Viscount Edmond de Poncins.
-♀ 13 $\frac{1}{8}$	5	8	Tilel Valley . . .	J. Campbell of Kilberry.
♀ 11 $\frac{5}{8}$	4	5	Kashmir . . .	Sir Edmund G. Loder, Bart.
♀ 11 $\frac{1}{4}$	4	8 $\frac{1}{4}$	Do. . .	Capt. Cecil Levita.

ALPINE IBEX (*Capra ibex*).

This species, which only survives in a protected state, differs from the Asiatic ibex by the much smaller size of the beard of the male, as well as by a slight variation in the horns; the height at the shoulder reaching to about 40 inches. Weight from 85 to 106 lbs., clean. Formerly distributed throughout the higher Alps of Switzerland, Savoy, and the Tyrol, but now surviving only in a few valleys on the Italian side of Monte Rosa. Most of the few specimens now obtainable are comparatively small, and good horns are very scarce in English collections.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-44 $\frac{3}{8}$	10 $\frac{1}{2}$	¹ ...	Valley of Aosta . . .	H.M. the King of Italy.
-38 $\frac{3}{8}$	...	...	Do. . .	Do.
-37 $\frac{3}{4}$	...	...	Do. . .	Do.
35 $\frac{3}{8}$	9	26 $\frac{3}{4}$	Do. . .	Do.
34 $\frac{1}{2}$	9 $\frac{3}{4}$	...	Styria . . .	Sir Edmund G. Loder, Bart.
-34 $\frac{1}{4}$	9	26	Valley of Aosta . . .	H.M. the King of Italy.
-33 $\frac{1}{8}$	9	39 $\frac{3}{8}$	Do. . .	Shot by H.M. the late Victor Emanuel, King of Italy.
-31 $\frac{1}{2}$	9 $\frac{1}{8}$	18 $\frac{3}{4}$	Alps of Savoy . . .	Sir Edmund G. Loder, Bart.
-30	9	21	?	Dublin Museum.
28 $\frac{1}{2}$	9 $\frac{3}{8}$	18	Valley of Aosta . . .	C. H. Wilczek.
26 $\frac{3}{4}$	8 $\frac{3}{8}$	22 $\frac{1}{8}$	Do. . .	British Museum.
23 $\frac{1}{2}$	8 $\frac{3}{4}$	17 $\frac{1}{2}$	?	Do.
21 $\frac{1}{2}$	8 $\frac{5}{8}$	14 $\frac{7}{8}$	Valley of Aosta . . .	Do.
-17 $\frac{1}{2}$	8 $\frac{1}{2}$	13	Do. . .	Count E. Hoyos.

¹ Height at shoulder, 33 $\frac{1}{8}$; weight, 170 lbs.

Head of Arabian Ibex, from the Sinaitic Peninsula.

ARABIAN IBEX (*Capra nubiana*).

This species may be easily distinguished from both the Asiatic and the Alpine species by the form of the horns, which are very long, rather slender, and with the outer front angle much bevelled off, so that the proper front surface is very narrow, and its transverse knots proportionately short.

Distribution.—The mountains of Southern Arabia, Palestine, the Sinaitic Peninsula, Upper Egypt, and probably also those of Morocco and the interior of Senegambia. Arabian name, *beden*. Comparatively few European sportsmen have killed this handsome ibex, but it has been shot by E. N. Buxton.

ARABIAN IBEX (*Capra nubiana*)—*continued*.Head of Arabian Ibex, from Arabia ; Sclater, *P.Z.S.* 1897.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
50	9		Southern Arabia	Capt. J. T. Brinkley.
42	7½		Arabia	East India Club.
41½	...		Hadramut, S.E. Arabia	J. Menges.
39½	9½		Markat	Do.

ARABIAN IBEX (*Capra nubiana*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
39½	8½	19½	South-East Arabia . . .	Hon. Walter Rothschild.
35½	6½	12	Sinaitic Peninsula . . .	W. E. Pease.
35½	7	15½	Do. . . .	J. D. Cobbold.
32½	6½	7	Do. . . .	Captain John Marriott.
32½	7	18½	Do. . . .	E. H. Pease.
31½	8	13½	Arabia	Dr. Percy Rendall.
31½	6½	13½	Sinaitic Peninsula . . .	W. Moncreiffe.
31½	6½	7	Do. . . .	W. E. Pease.
29½	6½	9½	Do. . . .	E. H. Pease.
29	...	13	Do. . . .	Hon. Walter Rothschild.
28½	7½	6	Do. . . .	E. N. Buxton.
25½	6	12	Do. . . .	British Museum.
♀ 10½	3½	2½	Do. . . .	W. E. Pease.
♀ 8½	3½	5½	Do. . . .	W. Moncreiffe.

The following specimens are of African origin :—

46½	8	...	North Africa	British Museum.
43	7½	22	Suakin	Col. G. E. Lloyd, D.S.O.
42½	9½	15½	Mountain Range of Assout- ribai, N.W. of Suakin	The late Major E. M. Barttelot.
41½	7½	17½	North Africa	Major W. H. Besant.
38½	7½	12½	Upper Egypt	Sir Edmund G. Loder, Bart.
38½	7½	27½	Suakin	Col. G. E. Lloyd, D.S.O.
38½	8	21	Do. . . .	Capt. A. King.
35½	7½	12	Do. . . .	W. P. Gore-Graham.
30½	8	17½	Do. . . .	Commander A. T. Hunt.

ABYSSINIAN IBEX (*Capra vali*).

This ibex, which inhabits the mountains of the interior of Abyssinia, is still very imperfectly known. Its most distinctive feature appears to be a prominent boss on the forehead.

25½	7½	13	Abyssinia	Hon. Walter Rothschild.
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Skull and Horns of Sind Wild Goat. From A. O. Hume's specimen.

PERSIAN WILD GOAT (*Capra hircus agagrus*).

SIND WILD GOAT (*Capra hircus blythi*).

The horns of the Persian wild goat, which appears to be the ancestral form of the domestic goat of Europe (*C. hircus*), differ from those of the various species of ibex by having no distinct front surface, but merely a sharp notched keel, representing the inner front angle of the ibex horn. In old males the beard is very long. The general colour of the upper parts is brownish gray in winter and reddish brown in summer, with the under parts white, and blackish brown and white markings on the face and limbs. Height at shoulder reaching to 37 inches.

The so-called Sind ibex (*C. hircus blythi*) appears to be a second local race of the species, inhabiting Sind and parts of Baluchistan, where it probably passes imperceptibly into the Persian race. It is distinguished mainly by a slight difference in the form of the horns.

Distribution.—The islands of South-Eastern Europe, and the mountains of South-Eastern Europe and South-Western Asia from the Caucasus through Persia to the confines of Baluchistan and Sind. Native Persian name, *pasang* (rock-footed).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
55½	...	24	Persia . . .	Carl Hagenbeck.
52½	7½	8½	Sind . . .	A. O. Hume, C.B. (Shot by Col. F. Marston.) See illustration.
48½	8½	13½	Caucasus . . .	British Museum.
-48	8	20½	Sind . . .	J. D. Inverarity.
46½	7½	14	Do. . .	Sir Edmund G. Loder, Bart.
46½	8½	18½	Asia Minor . .	F. C. Selous.
46	7½	11	Sind . . .	Major C. S. Cumberland.
-45½	8½	9½	Daghestan . .	E. N. Buxton.
45½	8	11½	Sind . . .	Col. J. Biddulph.
44½	8½	21½	Caucasus . . .	British Museum.
44½	8½	11	?	Hume Collection, British Museum.
43½	8½	14½	Kurrachi District .	A. O. Hume, C.B.
43	9½	...	Asia Minor . .	F. C. Selous.
43	9	15½	Taurus Mountains .	Sir Edmund G. Loder, Bart.
43	8½	22½	?	J. Carr Saunders.
-42	9	...	?	The MacLaine of Lochbuie.
-42	7	12	Sind . . .	J. D. Inverarity.
-41½	...	...	Do. . .	Capt. E. C. Tidswell.
-40½	...	...	?	Indian Museum.
39½	9½	1½	Erzerum . . .	British Museum.
39½	7½	27	Mekran Coast, near Ormara	A. O. Hume, C.B.
38	9½	...	?	Major C. S. Cumberland.
-38	10½	15	Asia Minor . .	Capt. John Marriott.
-38	...	...	?	Maharaja of Travancore, G.C.S.I.
36	8½	6½	Baluchistan . .	Hon. Walter Rothschild.
-35½	8	11½	Do. . .	Lieut.-Col. L. L. Fenton.
-35½	9	16	Daghestan . .	Ford G. Barclay.

WILD GOAT (*Capra hircus* *ægagrus* and *blythi*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
35½	9½	13½	Mount Ararat . . .	British Museum.
35	8½	6½	Julfa, Persian Frontier	Prince Demidoff.
34½	9½	18	Baluchistan . . .	Sir Victor Brooke's Collection. (Shot by Major Hogg.)
32½	8½	11½	Julfa	Prince Demidoff.
32½	9	13½	North Persia . . .	Hon. C. Hardinge, C.B.
-31	7½	15½	Sind	Dr. Percy Rendall.
30½	8½	15½	Julfa	Prince Demidoff.
29½	8½	12	Asia Minor . . .	H. O. Whittall.
29½	9½	8½	Cilician Taurus, Asia Minor	C. G. Danford, British Museum.
27	...	...	Antimilo	H. Toppin.
-26½	...	...	Do.	Marquis of Ivrea.
♀ 10½	4½	3½	Caucasus	Sir Victor Brooke's Collection.

DOMESTIC GOAT (*Capra hircus* *typicus*).

52½	10½	40½	Daghestan . . .	Sir Edmund G. Loder, Bart.
44½	6	29½	Angora	} Do.
40½	9½	...	Daghestan	
-37	7½	35	Meoble, N.B. . . .	Walter Jones.
-30½	7½	35	Do.	Do.
25½	7½	4	South Wales . . .	Major G. Palmer.
24	...	...	Joura	Marquis of Ivrea.
-16	6	13½	Loch Ness, N.B. . .	C. V. A. Peel.

Head of Spanish Tur. Drawn from Abel Chapman's specimen.

SPANISH TUR or IBEX (*Capra pyrenaica*).

Although commonly designated an ibex, the Spanish wild goat has horns more like those of one of the Caucasian tur, and is therefore better designated as a species of that group. The horns, which have a sharp inner edge, are twisted in a very open semi-spiral, with the tips generally turned outwards, and are quite unlike those of the true ibex. In having dark and light markings on the limbs the species is, however, much more like the Persian wild goat than either of the Caucasian tur. The beard of the males varies greatly in size according to age and season. Height at shoulder from about 27 to 32 inches at the shoulder; weight, when clean, about 10 stone.

Distribution.—The Pyrenees and the high ranges of Central Spain, Andalusia, and Portugal. The typical form of the species inhabits the Pyrenees; those inhabiting the more southern parts may be distinguished as a separate race (*C. pyrenaica hispanica*).

SPANISH TUR or IBEX (*Capra pyrenaica*)—continued.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
31	8 $\frac{1}{2}$	...	Pyrenees . . .	Sir Victor Brooke's Collection.
-30 $\frac{1}{2}$	9 $\frac{1}{2}$	23 $\frac{1}{2}$	Central Spain . . .	Abel Chapman and W. J. Buck.
-29 $\frac{3}{4}$	8 $\frac{1}{2}$	23 $\frac{1}{2}$	Almeira . . .	H. Brinsley Brooke.
29 $\frac{1}{2}$	9 $\frac{1}{2}$	23 $\frac{1}{2}$	Sierra Nevada . . .	Abel Chapman.
28	9 $\frac{1}{2}$	23 $\frac{3}{8}$	Spain . . .	British Museum.
27 $\frac{3}{4}$	9	25	Do. . .	Sir Edmund G. Loder, Bart.
27 $\frac{1}{2}$	10 $\frac{3}{8}$	19 $\frac{1}{2}$	Pyrenees . . .	British Museum.
25 $\frac{5}{8}$	8 $\frac{1}{2}$	16 $\frac{5}{8}$	Spain . . .	Hon. Walter Rothschild.
24 $\frac{1}{2}$	10	14	Val d'Arras . . .	E. N. Buxton.
23 $\frac{3}{8}$	8	16	Southern Spain . . .	Pablo Larios.
22 $\frac{1}{2}$	9 $\frac{1}{2}$	18 $\frac{3}{4}$	Val d'Arras . . .	E. N. Buxton.
22	7 $\frac{1}{2}$	14	Spain . . .	Pablo Larios.
16	7 $\frac{1}{2}$	11	Do. . .	Col. R. J. Heber-Percy.
- ♀ 10 $\frac{3}{4}$	5 $\frac{5}{8}$	7 $\frac{1}{2}$	Val d'Arras . . .	A. E. Leatham.
♀ 9 $\frac{1}{2}$	5 $\frac{5}{8}$	6 $\frac{1}{2}$	Do. . .	E. N. Buxton.

Skull and Horns of West Caucasian Tur. Shot by St. George Littledale.

WEST CAUCASIAN TUR or IBEX (*Capra caucasica*).

Of the two peculiar kinds of wild goats inhabiting the Caucasus, and locally known as tur, the present species is easily recognised by the approximation in the form of its horns (especially in immature individuals) to those of true ibex, and the uniform bright chestnut-brown colour of the hair of the adult male in the summer coat; the chin, beard, and lower parts of the legs being alone black. Although the horns present a considerable resemblance to those of ibex, they are decidedly thicker, have a different curvature, and show distinct knobs, or knots only in their upper half. In young males the knots extend the whole length of the front of the horns, and the long winter coat is a pale drab colour. Height at shoulder about $37\frac{1}{2}$ inches.

Distribution.—The western half of the main chain of the Caucasus. Certain peculiarly-shaped horns appear to indicate the existence of a hybrid race between this species and the East Caucasian tur in the Central Caucasus.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40 $\frac{1}{8}$	12 $\frac{5}{8}$	15 $\frac{1}{4}$	Caucasus	St. George Littledale.
36 $\frac{1}{8}$	11 $\frac{5}{8}$	27 $\frac{5}{8}$	Do. . . .	Do.
34 $\frac{3}{4}$	11 $\frac{5}{8}$	22 $\frac{7}{8}$	Do. . . .	Do.
34 $\frac{1}{2}$	12	22	Kouban, Caucasus . . .	Prince Demidoff.
33 $\frac{1}{4}$	10 $\frac{5}{8}$	26 $\frac{3}{4}$	Do. . . .	St. George Littledale.
32 $\frac{1}{2}$	11 $\frac{3}{4}$	25 $\frac{1}{2}$	Do. . . .	Do.
32 $\frac{1}{4}$	11 $\frac{1}{2}$	25 $\frac{1}{4}$	Do. . . .	Prince Demidoff.
31 $\frac{1}{2}$	12 $\frac{1}{2}$	24 $\frac{1}{2}$	Do. . . .	Do.
30 $\frac{5}{8}$	11 $\frac{5}{8}$	16 $\frac{5}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.
30	11 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
26 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{2}$	Do. . . .	St. George Littledale.
¹ 22 $\frac{3}{4}$	10 $\frac{7}{8}$	22 $\frac{1}{4}$	Do. . . .	Do.
19 $\frac{7}{8}$	10 $\frac{5}{8}$	16 $\frac{1}{4}$	Caucasus	P. A. Holt, British Museum.

¹ Presumed hybrid between *C. caucasica* and *C. cylindricornis*.

Head of East Caucasian Tur.

EAST CAUCASIAN TUR (*Capra cylindricornis*).

A very different-looking creature from the last is the wild goat commonly designated by sportsmen the "Caucasian bharal"; this name being derived from the resemblance of its horns to those of the true Himalayan bharal. In spite of this point of resemblance, its affinities are, however, evidently with the goats, although it not improbably indicates a step from the more typical members of that group in the direction of the sheep. In addition to the peculiar form of its horns, this tur is characterised by the extreme shortness of the beard, which merely forms a curling fringe on each side of the chin, instead of the long central tuft observable at certain seasons in the West Caucasian species. The general colour of the fur is uniform dull brown, except on the chin, the tip of the tail, and portions of the legs, where it is blackish brown. Height at shoulder about 3 feet.

Distribution.—The Eastern Caucasus, from Kasbek to Daghestan.

It has been killed by few English sportsmen.

EAST CAUCASIAN TUR (*Capra cylindricornis*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
38½	12½	...	Eastern Caucasus . . .	Hon. Walter Rothschild.
36	13	...	Daghestan . . .	J. D. Cobbold.
34½	10½	13½	Caucasus . . .	Major Talbot.
33½	12	19½	Do. . . .	British Museum.
32½	10½	13½	Kasbek	Prince Demidoff.
32	13	19	Caucasus	Berthold Smith.
31½	12	7½	Do.	Ford G. Barclay.
31	11	28	Northern Caucasus . .	Capt. H. H. P. Deasy.
30	12	17	Daghestan	Ford G. Barclay.
29½	12	20	Caucasus	Sir Edmund G. Loder, Bart.
28½	11	16½	Do.	Sir Victor Brooke's Collection.
26½	10½	18	Do.	Sir Edmund G. Loder, Bart.
26	11	19	Do.	Major C. S. Cumberland.
-26	13½	26	Do.	Clive Phillipps-Wolley.
22½	10½	19½	Northern Caucasus . .	Arnold Pike.
20½	10	11½	Caucasus	H. R. H. le Duc d'Orléans.

Head of Male Bharal.

BHARAL (*Ovis nahura*).

Having horns not unlike those of the East Caucasian tur, the bharal, or blue sheep of Tibet, differs from the goats by the absence of a beard and a strong odour in the males, and on account of these and other points of difference from the goats is placed among the sheep, of which group it forms a very aberrant member. The most distinctive external features are the comparatively smooth and olive-coloured horns, which curve at first outwards and then backwards from the sides of the head; and the bluish gray colour of the thick fur of the back and sides; the flanks, under parts, and legs being handsomely marked with black and white. Height at shoulder about 33 inches; weight about 130 lbs. In the complete absence of glands on the face the bharal differs from the more typical sheep and resembles the goats.

Distribution.—Tibet, from Shigar, in Baltistan, and near Sanju, south-east of Yarkand, to Moupin in Eastern Tibet, and from the main axis of the Himalaya, or locally some distance south of the same, to the Kuenlun and Altyn Tag; in summer usually met with at elevations between 14,000 and 16,000 feet, and apparently never found below about 10,000 feet.

Length on front curve.	Circumference.	Tip to Tip.	Locality	Owner.
-32				The late B. H. Hodgson, <i>P.Z.S.</i> 1840, p. 66.
31½	13½	22½	Ladak	J. Campbell of Kilberry.

BHARAL (*Ovis nahura*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
30 $\frac{7}{8}$	12 $\frac{1}{2}$	21 $\frac{7}{8}$	Gurhwal . . .	A. O. Hume, C.B.
-30 $\frac{1}{2}$	11	15 $\frac{1}{2}$	Ladak . . .	P. H. G. Powell-Cotton.
30	11	24	Hanle, Spiti . . .	Capt. B. L. Carew.
29 $\frac{3}{4}$	12 $\frac{1}{2}$	22 $\frac{1}{2}$	Gurhwal . . .	A. O. Hume, C.B.
29 $\frac{1}{2}$	11 $\frac{5}{8}$	25 $\frac{1}{2}$	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
29 $\frac{1}{2}$	12	26 $\frac{1}{2}$	Northern Sikim . . .	Surg.-Capt. A. Pearse.
-29	12	...	?	Major A. E. Ward.
-29	...	...	?	Lucknow Museum.
-28 $\frac{1}{2}$	...	...	?	Capt. H. Trevor.
28 $\frac{1}{2}$	12 $\frac{1}{2}$	26 $\frac{1}{2}$	Hanle . . .	F. W. H. Walshe.
-28 $\frac{1}{2}$	10 $\frac{1}{2}$	...	?	Indian Museum.
28	11	20 $\frac{1}{2}$	?	Hume Collection, British Museum.
28	11	16	Hanle . . .	Arnold Pike.
27 $\frac{3}{4}$	10 $\frac{1}{2}$	10	Ladak . . .	Capt. G. Campbell.
27 $\frac{1}{2}$	11	21 $\frac{1}{2}$	Do. . . .	St. George Littledale.
-27	...	...	Do. . . .	Otho Shaw.
27	11 $\frac{1}{2}$	28	Tibet . . .	Major C. S. Cumberland.
26 $\frac{3}{4}$	11 $\frac{1}{2}$	23	Ladak . . .	Col. F. C. Lister-Kay.
26 $\frac{1}{2}$	10 $\frac{1}{2}$	20	?	A. S. Crum.
26 $\frac{1}{2}$	11 $\frac{7}{8}$	23	?	Sir Victor Brooke's Collection.
26 $\frac{1}{2}$	10 $\frac{3}{4}$	22	?	Sir Edmund G. Loder, Bart.
26	10 $\frac{3}{4}$	25 $\frac{1}{2}$	?	R. Johnstone.
26	10 $\frac{1}{2}$	20 $\frac{1}{2}$	?	Capt. W. H. Williamson.
25 $\frac{7}{8}$	12 $\frac{1}{2}$	31 $\frac{1}{2}$	East of Padam, Zaskar	Capt. M. S. Wellby.
25 $\frac{7}{8}$	11 $\frac{1}{2}$	18 $\frac{1}{2}$	?	Capt. C. B. Vandeleur.
-25 $\frac{1}{2}$	11 $\frac{1}{2}$	...	Ladak . . .	Major-General Alexander A. A. Kinloch.
25 $\frac{3}{8}$	11 $\frac{1}{2}$	25 $\frac{1}{2}$	Do. . . .	St. George Littledale.
-25 $\frac{1}{4}$	11 $\frac{1}{2}$	24 $\frac{1}{2}$	Do. . . .	Capt. H. W. Codrington.
25	10	25 $\frac{1}{2}$	?	Major H. C. Morland.
-24 $\frac{1}{2}$	12 $\frac{1}{2}$	26	?	J. Carr Saunders.

BHARAL (*Ovis nahura*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
- 24½	...	...	Upper Indus Valley	Col. J. Biddulph.
24½	11	26½	?	J. R. Carden.
24½	11	18	Shyok Valley	J. V. Phelps.
-24½	...	...	Do.	E. L. Phelps.
24½	10½	27½	South-east of Leh	Major J. A. Orr-Ewing.
24	11	22¾	Nepal	The late B. H. Hodgson, British Museum.
24	11½	25	Ladak	P. Church.
24	11½	...	?	Maharaja of Travancore, G. C. S. I.
-23¾	11¾	...	Kumaon	W. H. Lane.
23½	10	18	Ladak	Capt. F. E. S. Adair.
23½	9½	17½	Hanle	Capt. H. W. Codrington.
23½	13	25	?	Dr. W. P. Y. Bainbrigge.
23½	11¾	24½	?	Sir Robert Harvey, Bart.
23	12	26	Ladak	H.R.H. the Duke of Saxe- Coburg and Gotha.
23	10½	23¾	Do.	Reginald Beech.
9 7	4½	8¾	Northern Sikim	Hon. Walter Rothschild.

Head of Male Arui.

ARUI or UDAD (*Ovis lervia*).

The only wild sheep found throughout the continent of Africa is the arui, or fechtal of the Arabs, the udad or Barbary sheep of naturalists; a species with horns not very unlike those of the bharal, and also lacking glands on the face, but readily distinguished by its uniformly tawny colour, the fringe of long hair depending from the throat, chest, and the upper portion of the fore-legs, and the unusual length of the tail, which exceeds that of all other wild sheep. In the length of this appendage the arui approaches domesticated sheep, of which, however, it is not likely to be the ancestor. Height at shoulder about 3 feet 3 inches.

Distribution.—The mountains of Northern Africa, from Egypt to Morocco. This sheep is very difficult to find on its own ground.

ARUI or UDAD (*Ovis lervia*)—*continued.*

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29 $\frac{1}{8}$	12 $\frac{1}{2}$	19	Algeria . . .	V. Cholmondeley.
28 $\frac{1}{2}$	11 $\frac{1}{2}$	18	Do. . . .	Hon. John Ward, British Museum.
28 $\frac{1}{2}$	11 $\frac{5}{8}$	18 $\frac{1}{2}$	Algeria . . .	Sir Edmund G. Loder, Bart.
-28	11 $\frac{1}{2}$	16 $\frac{1}{2}$	S. Tunisia . . .	J. J. S. Whitaker.
-27 $\frac{3}{4}$	11 $\frac{1}{4}$	14 $\frac{9}{16}$	Algeria . . .	Viscount Edmond de Poncins.
26 $\frac{5}{8}$	10 $\frac{3}{4}$	15 $\frac{1}{4}$	North Africa . . .	British Museum.
26	11	17 $\frac{3}{4}$	Do. . . .	Do.
25 $\frac{1}{2}$	11 $\frac{1}{2}$	17 $\frac{1}{2}$	Algeria . . .	Hon. John Ward.
25 $\frac{1}{2}$	11 $\frac{1}{2}$	17	Do. . . .	F. de Murietta.
25 $\frac{1}{2}$	10 $\frac{5}{8}$	16	Do. . . .	Capt. G. J. Cuthbert.
-25 $\frac{1}{2}$	12 $\frac{1}{8}$	20 $\frac{1}{2}$	Do. . . .	Capt. John Marriott.
-25 $\frac{1}{2}$	11	18	Tunisia . . .	A. E. Pease.
25	11 $\frac{1}{4}$	13 $\frac{1}{2}$	North Africa . . .	W. E. Pease.
24 $\frac{1}{2}$	10 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . . .	Hon. R. A. Ward.
-♀ 20 $\frac{1}{2}$	10	16	Algeria . . .	A. E. Pease.
-♀ 19	7	17	Tunisia . . .	Capt. John Marriott.
-♀ 17	7 $\frac{1}{2}$	16 $\frac{1}{4}$	Atlas Mountains . . .	Viscount Edmond de Poncins.

Head of American Bighorn, from W. F. Sheard's specimen.

AMERICAN BIGHORN (*Ovis canadensis*).

The bighorn of the American continent, inclusive of its local races (frequently regarded as distinct species), is a large sheep, distinguished from the Asiatic argalis, among other features, by the comparative smoothness of the horns, in which the outer front angle is prominent, and the inner one rounded off, and also by the smaller size of the face-glands. There is a well-marked whitish patch on the rump, but the amount of white on the under parts and legs shows considerable local variation. In the typical Rocky Mountain race (*O. canadensis typica*) the ears are long and pointed, with short hair, and the horns, which are very heavy, diverge but little outwards, and generally have the tips broken. The Californian *O. canadensis nelsoni* is a paler southern race. On the other hand, in *O. canadensis stonei* of the North-West Territories the colour of the back is very dark, and the white on the belly and legs sharply defined. And both in this race and the light-coloured *O. canadensis dalli* of Alaska the horns are lighter, more divergent, and sharper pointed, while the ears tend to become shorter, blunter, and more hairy. Height at shoulder about 3 feet 2 inches. Weight about 350 lbs.

The horns of the ewes are very small in comparison to those of the rams, seldom measuring more than 15 inches on the curve from base to tip. Large male horns are now difficult to obtain, and of late years it is seldom that those of fresh-killed specimens are seen exceeding 38 inches on the curve from tip to tip. American sportsmen are keen to obtain horns of large basal girth; but these, as will be seen from the

following table, rarely exceed 16 inches. The Maclaine of Lochbuie possesses a specimen whose girth according to his own measurement is 19 inches.

Distribution.—North America, from the Rocky Mountains southwards to Sonora, Northern Mexico, and California, and northwards to Alaska and the shores of Bering Sea. The Alaskan race, for at least some portion of the year, is snow-white.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-52½	18½	...	The Selkirks, B.C., 1885	W. F. Sheard. (See illustration.)
-45	...	...	?	W. Grant Mackay.
-42½	16½	25½	Lower California . .	George H. Gould.
42	16	(tips much worn)	Wyoming . .	Picked up by T. W. H. Clarke.
...	17½	...	Do. . .	T. W. H. Clarke.
-41½	15	...	Kootenay, B.C. . .	Measured by John Fannin, Provincial Museum, B.C.
-40½	16½	...	Yellowstone . .	British Museum.
40½	15½	20½	?	Sir Edmund G. Loder, Bart.
-40	15½	...	Rocky Mountains . .	Otho Shaw.
40	15	21½	British Columbia . .	J. W. R. Young.
39½	15½	...	Colorado . .	St. George Littledale.
39½	16½	24½	Montana . .	British Museum.
39½	15½	19	?	Sir Edmund G. Loder, Bart.
-39	15½	...	?	W. A. Baillie-Grohman.
38½	15½	22	?	Gerald Buxton.
38½	16½	...	Bighorn Mountains . .	H. Seton-Karr.
38½	15½	19½	Montana . .	Edmund Littledale.
38½	16	19	N.W. Territories . .	S. Ratcliff.
38	17	...	Alberta, N.W.T. . .	Arnold Pike.
38	15	...	British Columbia . .	Captain F. Cookson.
-38	16½	...	Do. . .	Major C. C. Ellis.
37½	15½	23½	Mexico . .	J. A. H. Drought.
-37½	16½	22½	British Columbia . .	J. O. Shields.
37½	15½	16	Do. . .	J. Turner-Turner.
-37	16	31	Wyoming . .	T. W. H. Clarke.

AMERICAN BIGHORN (*Ovis canadensis*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
37	16½	...	Montana . . .	Major Maitland Kirwan.
37	16½	16	British Columbia . . .	R. H. Venables Kyrke.
37	15½	18½	Wyoming . . .	Lord Rodney.
36¾	19	15	British Columbia . . .	C. H. Kennard.
36¾	15½	22½	Wyoming . . .	Moreton Frewen.
36½	14½	...	Do. . .	Gerald Buxton.
36½	16	...	? . .	Thomas Bate.
36½	14	...	? . .	J. D. Cobbold.
36½	14½	18½	? . .	Gerald Buxton.
36	14½	16½	Montana . . .	R. H. Sawyer.
36	15½	...	Alberta, N.W.T. . .	Arnold Pike.
36	14½	16	Wyoming . . .	Captain G. Dalrymple White.
-35½	14½	17½	Do. . .	Count E. Hoyos.
35¾	15½	18½	British Columbia . . .	G. Wrey.
35¾	13½	17½	Do. . .	Hon. S. Tollemache.
35½	16	21	Do. . .	T. P. Kempson.
35½	12½	16	California . . .	Sir Victor Brooke's Collection.
35½	15½	18½	British Columbia . . .	Sir Peter Walker, Bart.
35	14	18½	Do. . .	Admiral Sir Michael Culme- Seymour, Bart.
-35	15	19¾	Wyoming . . .	Count Scheibler.
35	14	16	Do. . .	Gerald Hardy.
34½	14½	19	S.E. Montana . . .	J. A. Jameson.
34½	14½	...	California . . .	G. P. Fitzgerald.
-34	16	17	N.W. Wyoming . . .	A. Rogers.
34	16½	20	British Columbia Border	Barclay Bonthron.
33½	15½	...	British Columbia . . .	Admiral Sir Michael Culme- Seymour, Bart.
33	15½	18	Do. . .	Capt. E. G. Verschoyle.
33	14½	24½	Wyoming . . .	Lieut.-Col. Hon. W. Coke.
33	14½	22	? . .	F. H. B. Ellis.
33	14	23	British Columbia . . .	T. P. Kempson.

AMERICAN BIGHORN (*Ovis canadensis*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
33	15½	22	British Columbia . .	A. E. Butter.
32¾	15½	17½	?	C. G. R. Lee.
-32½	14½	19½	Fraser River, B.C. .	A. E. Leatham.
32½	15	17½	Lower California . .	G. Barnardiston.
32	15½	19½	British Columbia . .	J. W. Wood, jun.
32	14¾	17½	Yellowstone River . .	British Museum.
31½	14½	17½	N.W. Territory . .	Major Algernon Heber-Percy.
31	17½	...	Grand Encampment, Wyoming	Frank Cooper.
-31	13	22	British Columbia . .	T. E. Buckley.
30¾	15	23	?	Hon. Walter Rothschild.
30½	15¾	about 17½	Lower California . .	Ely Quilter.
30½	15½	18	Wyoming . .	J. L. Scarlett.
-30½	14	15½	Do. . .	Hugh Peel.
30	15½	14	Alberta, N.W.T. . .	F. C. Williamson.

ALASKAN BIGHORN (*Ovis canadensis dalli*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
34	12½	18½	Alaska . .	Rowland Ward.
33	12¾	15	Do. . .	Hon. Walter Rothschild.
32½	13½	20½	Do. . .	J. T. Studley, British Museum.
♀ 9½	4½	8	Do. . .	Do.

Skull and Horns of Male Kamschatkan Bighorn.

KAMSCHATKAN BIGHORN (*Ovis canadensis nivicola*).

Although the Kamschatkan wild sheep can be readily distinguished from the Rocky Mountain bighorn (*O. canadensis typica*) by the slenderness of the horns at the points, and their wider tip-to-tip measurement, as well as by shorter, blunter, and more thickly haired ears, the shorter face, the longer hair of the body, and the inferior size of the white patch on the rump, yet there are several varieties of the bighorn from the more northern districts of America which tend more or less completely to bridge over these points of difference. Among these are the Alaskan bighorn (*O. canadensis dalli*) and the N.W. bighorn (*O. canadensis stonei*), in which the horns are of the Kamschatkan type, and the ears are shorter than in the Rocky Mountain race. These transitions indicate that all the bighorns are essentially local modifications of the same animal; the Kamschatkan form being, as might be expected from its isolation, the most aberrant. Like the Alaskan race, the Kamschatkan bighorn appears, at least sometimes, to turn white in winter. Height at shoulder about 37 or 38 inches; weight about 330 lbs.

Distribution.—Kamschatka, and the Stanovoi Mountains as far south as the sources of the Utschuri River; perhaps also in parts of Siberia.

KAMCHATKAN BIGHORN (*Ovis canadensis nivicola*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-38	13½	26	Kamschatka . . .	Dr. F. H. H. Guillemard's party in the "Marchesa," <i>P.Z.S.</i> 1885, p. 675.
-35½	14	26½	Do. . .	Do.
34½	11½	17½	Do. . .	British Museum.
34	13½	23½	Do. . .	Hon. Walter Rothschild.
32½	13½	23	Do. . .	Sir Edmund G. Loder, Bart.
-31½	14	26	Do. . .	Dublin Museum.
31½	13½	21	Cape Chepunske . . .	Col. J. Biddulph.
-31½	13½	24	Kamschatka . . .	Dublin Museum.
27½	13½	25½	Do. . .	Rowland Ward.
♀ 10½	5	14½	Do. . .	Hon. Walter Rothschild.

Skulls and Horns of Siberian Argali, from specimens shot in the Altai by Major C. S. Cumberland.

Head of Marco Polo's Sheep. From David T. Hanbury's specimen.

MARCO POLO'S SHEEP (*Ovis poli*).

In common with the following members of the genus *Ovis*, this splendid sheep has the transverse wrinklins of the horns well developed, and small glands are present on the face. The horns of the adult male are characterised by their comparative slenderness and great length, forming a spiral of more than one complete circle, with the front angles typically well developed. The hind-quarters show a large amount of white, extending over the greater part of the thighs; and in winter the throat is furnished with a voluminous ruff of long white hairs, which disappears in summer. Height at shoulder about 4 feet, or perhaps rather less; weight of adult male about 22 stone.

Distribution.—Typically the plateau of the Pamirs in Central Asia, but represented by a closely allied race (*O. poli karelini*) in the Thian Shan range of Turkestan, in which the horns are generally somewhat shorter, and may have the front outer angle rounded off. This sheep was first definitely made known in England by

specimens obtained during the Second Yarkand Mission under the late Sir D. Forsyth; since which date it has been killed by Mr. St. George Littledale, Major C. S. Cumberland, Capt. H. Bower, Viscount de Poëncin, and many other sportsmen.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-75	16	54½	Pamir	Field-Marshal Lord Roberts, V.C.
73	15	48	Little Pamir	The late Col. H. C. B. Tanner.
-71	15½	53½	Great Pamir	Viscount Edmond de Poëncin.
70	17	52	Do. . . .	Maharaja of Kuch Behar.
69½	15½	56	?	Marquis of Lansdowne, K.G., K.C.M.G.
69½	14½	39	Tagdumbash	Sir Edmund G. Loder, Bart.
68½	15	35½	?	Lewis Flower.
68	17	43	Pamir	Col. R. Pole Carew, C.B.
-68	16	52	?	Indian Museum.
-67½	16	53½	?	Col. J. Biddulph, Indian Museum.
67	16½	42	Pamir	Col. R. Pole Carew, C.B.
-67	16	...	Thian Shan	Maharaja of Travancore, G.C.S.I.
67	15½	42½	?	Duke of Westminster.
66½	15½	46	?	Sir Edmund G. Loder, Bart.
66½	13½	46½	Valley between Little and Great Pamir	A. O. Hume, C.B.
66	16½	47	Do.	Do.
66	15½	44	Do.	Hume Collection, British Museum.
66	15½	42	?	A. Leslie Renton.
65½	16	53	Great Pamir (16,000 feet) .	Col. T. E. Gordon, British Museum.
-65	16	41	Central Asia	Dublin Museum.
65	16½	49½	?	Major C. F. Blane.
-65	...	...	?	St. George Littledale (presented to the Empress of Russia).
64½	16½	46	Pamir	Major C. C. Ellis.
64½	16½	41	Do. . . .	W. Lawrence.
64½	15½	39	Do. . . .	H. C. V. Hunter.
64	15½	50	Little Pamir	R. P. Cobbold.
64	15	49	?	Duke of Portland.

MARCO POLO'S SHEEP (*Ovis poli*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
63½	16½	42½	Pamir	Hon. Walter Rothschild.
63½	15¾	57½	Valley between Great and Little Pamir	A. O. Hume, C.B.
63½	15½	46½	Tagdumbash	Earl of Dunmore.
63	16	49½	Little Pamir	R. P. Cobbold (Bachelors' Club).'
62½	16½	51	Tagdumbash	T. W. Greenfield.
62½	15	57	?	Sir Edmund G. Loder, Bart.
62	15½	40	?	Hon. Charles Ellis.
61½	15½	46½	Tagdumbash	E. L. Phelps.
60½	15¾	46½	Pamir	St. George Littledale.
60	16	49½	Little Pamir	R. P. Cobbold.
60	15¾	46½	Tagdumbash	T. W. Greenfield.
60	15½	46	Do. . . .	P. Church.
-60	...	...	?	Capt. H. Bower.
-60	17	...	Tagdumbash	H. Dauvergne.
-60	16	52	Do. . . .	H. Lennard.
59½	15½	45½	Pamir	Earl of Dunmore.
59	16½	47	?	Viscount Powerscourt.
59	15¾	41	?	Martyn Kennard.
59	14	42½	Tagdumbash	David T. Hanbury.
58	16	43	Do. . . .	Do.
57½	15	46½	?	Major-General Sir Arthur Ellis, K.C.V.O.
57½	14¾	50	Pamir	Reginald Beech.
57½	16½	49½	?	W. Lawrence.
57½	14¾	48	Pamir	Reginald Beech.
57	15½	42	Do. . . .	Hon. R. A. Ward.
56½	15½	35½	Do. . . .	St. George Littledale.
56	17½	42	Do. . . .	E. L. Phelps.
56	15	44	Do. . . .	E. P. Tennant.
55½	15¾	43	?	J. Carr Saunders.

MARCO POLO'S SHEEP (*Ovis poli*)—continued.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
55 $\frac{1}{2}$	16 $\frac{1}{2}$	43	Pamir	Major C. S. Cumberland.
55 $\frac{1}{2}$	16 $\frac{1}{2}$	44	Do.	Sir Edmund G. Loder, Bart.
55 $\frac{1}{2}$	15 $\frac{1}{2}$	39	?	The late W. F. Webb.
55	16	44	?	H.R.H. le Duc d'Orléans.
54 $\frac{1}{2}$	15 $\frac{1}{2}$	48 $\frac{3}{4}$	Pamir	Sir Victor Brooke's Collection.
54 $\frac{1}{2}$	16 $\frac{1}{2}$	34 $\frac{3}{4}$	West Mongolia	St. George Littledale.
54	16 $\frac{3}{4}$	39	?	Viscount Fincastle, V.C.
53 $\frac{1}{2}$	15 $\frac{1}{2}$	43 $\frac{3}{4}$	Lake Karakol	St. George Littledale.
53	14 $\frac{1}{2}$	45	Tagdumbash	Major H. C. Morland.
53	..	...	?	Lucknow Museum.
-52	16	41	Tagdumbash	H.M. the King of Italy.
52	15 $\frac{1}{2}$	39	Do.	Capt. J. Manners-Smith, V.C., C.I.E.
51 $\frac{1}{2}$	15	48	Do.	J. G. Millais.
51	15 $\frac{1}{2}$	38 $\frac{3}{4}$	Do.	A. Leslie Renton.
50 $\frac{1}{2}$	15	42 $\frac{3}{4}$	Altai Plateau, Pamir	Capt. J. Manners-Smith, V.C., C.I.E., British Museum.
- ♀ 14.7	5.90	15.75	Great Pamir	Viscount Edmond de Poncins.
♀ 10 $\frac{1}{2}$	5 $\frac{1}{2}$	13 $\frac{1}{2}$	Tagdumbash	David T. Hanbury.

SWAN TYPE

Skull and Horns of Siberian Argali.
From a specimen shot by St. George Littledale in the Altai.

SIBERIAN ARGALI or AMMON SHEEP (*Ovis ammon*).

Closely allied to Marco Polo's sheep, but distinguished by the thicker and less expanded horns, which often have the outer front angle much rounded off, and the wrinklins very fine. A more or less distinct white patch on the rump, not extending on to the thigh, which is dark-coloured like the back; no ruff on the throat, even in the long winter coat. In summer the coat of old males, which is very short, tends to become more or less light-coloured all over. Height at shoulder from about 45 inches to 4 feet; weight from about 250 to 350 lbs.

As in the Tibetan race, considerable individual variation may be noticed in the horns, some having the outer front angle much more developed than usual; it does not appear that these differences can be accounted for by age.

Distribution.—In former times apparently extending from the Baikal Mountains in the south of Eastern Siberia through Northern Mongolia to the Semipalatinsk Altai; now chiefly restricted to the two latter localities.

SIBERIAN ARGALI or AMMON SHEEP (*Ovis ammon*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality	Owner.
62½	19½	38½	Altai . . .	St. George Littledale.
62	19	38½	Do. . . .	H. J. Elwes.
61½	19½	39½	Do. . . .	St. George Littledale, British Museum.
59½	19½	38½	Do. . . .	St. George Littledale.
56½	18½	33½	Do. . . .	Major C. S. Cumberland.
55	18	39	Do. . . .	Prince Demidoff.
54½	18½	30	Do. . . .	Major C. S. Cumberland.
54½	19½	33½	Do. . . .	Do.
54½	19	35	Do. . . .	Do.
53½	19	22	Do. . . .	St. George Littledale.
52½	19½	33	Do. . . .	Prince Demidoff.
52½	18½	38½	Do. . . .	Do.
52	19	37½	Do. . . .	Do.
51½	18½	26	Do. . . .	Do.
51½	19½	31	Do. . . .	Do.
51	19½	33	Do. . . .	Do.
51	19½	33	Do. . . .	St. George Littledale.
50½	18½	37½	Do. . . .	Do.
50	19½	31½	Do. . . .	Major C. S. Cumberland.
50	19½	36	Do. . . .	St. George Littledale.
50	19½	27½	Do. . . .	Sir Edmund G. Loder, Bart.
49½	20½	25	Do. . . .	St. George Littledale.
47½	19	31½	Siberia . . .	British Museum.
45½	20	27½	Altai . . .	Prince Demidoff.
40	16	33	Do. . . .	Princess Demidoff.



Head of Tibetan Argali.

TIBETAN ARGALI (*Ovis ammon hodgsoni*).

Chiefly distinguished from the true ammon sheep by the development of a distinct white ruff on the throat of the males, at least in the winter coat, and also by the less degree of lateral expansion of the horns, which do not form more than a single complete circle, and are generally broken at the tips. The wrinkles on the horns are perhaps somewhat less prominent, and the outer front angle is frequently well developed.

The height at the shoulder is perhaps rather less than in the true ammon, of which this sheep is best regarded as a local race. A specimen measured by Major Greenway was 76 inches from the nose to the tip of the tail, and the weight about 212 lbs. In another male, whose age was estimated at 10 years, the height at the shoulder was 43 inches, the girth 50 inches, and the weight 205 lbs. (P. H. G. Powell-Cotton).

Distribution.—The plateau of Tibet, from Northern Ladak to the districts north of Sikim, and northwards to the Kuenlun; eastern limits unknown.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
57	18 $\frac{3}{4}$	29	Ladak . . .	Arnold Pike.
50 $\frac{1}{2}$	18 $\frac{1}{4}$	19	Pangong Lake . .	Sir Edmund G. Loder, Bart.
-50	17	...	Tibet . . .	W. H. Lane.
-48 $\frac{1}{2}$	19	...	Do. . . .	E. Howard Brooke.
48	16	23	Rudok . . .	Major G. A. L. Carew, D.S.O.
48	18 $\frac{1}{2}$	20	Ladak . . .	Major H. C. Morland.
48	18	31	Do. . . .	Major Hon. A. Dalzell.
-47	17	...	Do. . . .	Otho Shaw.
46 $\frac{1}{2}$	19 $\frac{3}{4}$	20	Do. . . .	A. O. Hume, C.B.
-46 $\frac{1}{2}$	16 $\frac{1}{2}$	21	Ladak . . .	P. H. G. Powell-Cotton.
46 $\frac{1}{2}$	16 $\frac{3}{4}$	...	Do. . . .	Capt. H. M. Biddulph.
-46	19	...	?	Major C. S. Cumberland.
46	16	17	?	Hon. R. A. Ward.
45 $\frac{1}{2}$	16 $\frac{1}{4}$	17	?	Duke of Teck, G.C.B.
45	17	16	Ladak . . .	J. V. Phelps.
-45	...	...	?	Lucknow Museum.
44 $\frac{5}{8}$	17 $\frac{1}{2}$	22 $\frac{1}{2}$	Tibet . . .	The late B. H. Hodgson.
-44 $\frac{1}{2}$	17	21 $\frac{7}{8}$	Ladak . . .	A. E. Leatham.
44	16 $\frac{1}{2}$	19 $\frac{1}{4}$	Do. . . .	Major C. S. Cumberland.
44	16	17 $\frac{1}{2}$	Do. . . .	W. R. Lawrence.
-44	18	...	Do. . . .	Maharaja of Travancore, G.C.S.I.
-43	...	...	Do. . . .	Capt. W. Bailey.
42 $\frac{1}{2}$	16 $\frac{1}{2}$	19	?	A. O. Hume, C.B.
42 $\frac{1}{2}$	17	...	?	Lieut.-Col. T. Greenaway.
-42 $\frac{1}{2}$	16	15	Ladak . . .	Capt. H. M. Biddulph.
42 $\frac{1}{2}$	16	18	Do. . . .	Hume Collection, Brit. Museum.
42 $\frac{1}{2}$	15 $\frac{1}{4}$	...	?	J. Carr Saunders.
42 $\frac{3}{8}$	16 $\frac{1}{4}$	20	Tibet . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.

TIBETAN ARGALI (*Ovis ammon hodgsoni*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
42½	16¾	14½	Ladak . . .	Hume Collection, British Museum.
42	15½	17	Near Hanle . . .	Capt. F. E. S. Adair.
42	...	...	Rudok . . .	Major G. A. L. Carew, D.S.O.
41½	16	...	Tibet . . .	Hon. Walter Rothschild.
41½	16	15	?	Duke of Westminster.
-41½	...	...	Ladak . . .	G. G. Thatcher.
41½	16¾	19	Do. . . .	Sir Victor Brooke's Collection.
-41	...	18½	Do. . . .	Major A. E. Ward.
41	17½	...	Do. . . .	E. L. Phelps.
41	16½	17	Do. . . .	R. Johnstone.
40½	14½	26½	?	St. George Littledale, Brit. Museum.
40½	17½	20½	Ladak . . .	Hon. Charles Ellis.
40½	16½	19	Do. . . .	Col. R. J. Heber-Percy.
40½	15¾	18¾	Do. . . .	A. C. Bailey.
-40	17	...	Do. . . .	Major-General Alexander A. A. Kinloch.
-40	...	...	?	Capt. H. Trevor.
40	17	19½	Ladak . . .	Sir Edmund G. Loder, Bart.
-40	17	...	?	Indian Museum.
-40	...	...	Ladak . . .	Otho Shaw.
-40	17½	...	Hanle . . .	Capt. H. W. Codrington.
39½	17	14	Ladak . . .	F. W. H. Walshe.
39½	17	14½	Do. . . .	Hon. Charles Ellis.
39½	17½	21½	Do. . . .	Dr. W. P. Y. Bainbrigge.
39	17	19	Do. . . .	Sir Robert Harvey, Bart.
♀ 18½	8½	23	Do. . . .	David T. Hanbury.
♀ 18	7	19½	Tibet . . .	The late B. H. Hodgson, British Museum.
♀ 14½	7½	17½	Ladak . . .	Sir Victor Brooke's Collection.

MONGOLIAN ARGALI (*Ovis ammon jubata*).

Nearly allied to the Tibetan race, having a distinct yellowish-white throat ruff and generally similar horns, but, in some cases at least, the outer front angles of the latter much rounded off. The white on the buttocks and hinder surface more abundant and purer in colour.

Distribution.—Eastern Mongolia to the north of Pekin.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
44½	16½	23	Manchuria . . .	Henri de Bourbon, Comte de Bardi.

Head of Male Shapu.

SHAPU or URIAL (*Ovis vignei*).

A much smaller sheep than either of the Asiatic argalis, with comparatively slender and well-wrinkled horns of considerable length, which when fully developed curve forwards along the sides of the face; the males with a more or less strongly developed white ruff on the throat. General colour varying from rufous brown to gray in summer, with the chest, under parts, and portions of the legs white, and sometimes blackish "points." Females with small horns. Height at shoulder about 32 inches; weight about 120 lbs.

Distribution.—From Ladak and Zanskar to Russian Turkestan, Afghanistan, Baluchistan, Southern Persia, the North-West Frontier of India, and the Punjab Salt-Range. Two local races, which probably intergrade in the Indus valley, may be recognised. First, the typical urin of Astor, the sha or shapu of Ladak (*O. vignei typica*); and secondly, the smaller Punjab urial (*O. vignei*), in which the colour is redder, the ruff more developed, and the front angles of the horns often show a knotted keel. There is also *O. vignei blanfordi* of Baluchistan; and it is possible the Persian form, in which the ruff is said to be but little developed, may form a fourth.

(a) SHAPU (*Ovis vignei typica*).

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
39	11½	15½	?	Major Sir H. S. Rawlinson, Bart.
38½	12½	11½	?	J. Carr Saunders.
38½	11½	8½	Near Leh . . .	E. L. Phelps.
36½	11½	4½	Near Ley . . .	A. O. Hume, C.B.
-36½	11½	...	Near Leh . . .	Major A. E. Ward.
-36½	10½	10½	Baltistan . . .	Capt. T. A. Salt.
34½	11	...	?	East India Club.
-33½	12½	13	Ladak . . .	P. H. G. Powell-Cotton.
33½	12	12	Do. . . .	Arnold Pike.
-33½	11½	10½	Do. . . .	Sir Edmund G. Loder, Bart.
33	10½	15	Do. . . .	F. W. H. Walshe.
32½	10½	11½	?	Sir Victor Brooke's Collection.
-32	11	9½	Ladak . . .	Col. J. Biddulph.
31½	10½	7	Do. . . .	Col. F. C. Lister-Kay.
-31	11	...	Do. . . .	J. D. Cobbold.
30½	8½	19	Do. . . .	K. Dingwall.
30	11½	16	?	Hon. Walter Rothschild.
-30	...	...	Ladak . . .	Otho Shaw.
-30	11	...	?	Maharaja of Travancore, G.C.S.I.
-30	...	...	?	Lucknow Museum.
29½	10½	...	?	H. C. V. Hunter.
29½	10½	13	Ladak . . .	J. V. Phelps.
29½	10½	15½	Tochi Valley . . .	J. Johnston-Stewart.
29	11½	...	?	Sir Robert Harvey, Bart.
29	11	9½	Ladak, W. bank of the Indus . . .	A. Leslie Renton.
-28	...	...	Gilgit . . .	Otho Shaw.
28	10½	13	?	B. Vincent.
27½	11½	18½	?	Martyn Kennard.
-27½	10	...	West Ladak . . .	Capt. F. E. S. Adair.

(a) **SHAPU** (*Ovis vignei typica*)—continued.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-27½	...	...	Skardo	Major George Douglas.
-27½	11½	19	Astor	Capt. H. W. Codrington, Officers' Mess Queen's Own Corps of Guides.
-27½	10½	15	Do.	Capt. F. E. S. Adair.
26¾	10¾	...	Shigar	E. L. Phelps.
26½	10½	13	Ladak	St. George Littledale.
26½	9¾	19½	?	W. J. M'Lachlan.
25½	11½	15½	?	Hon. Charles Ellis.

(b) **URIAL** (*Ovis vignei cycloceros*).

Strictly speaking, *cycloceros* has no right to stand for this race, as it was given to the typical form, but at present it seems inadvisable to change it.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39½	10¾	18½	Punjab	Major F. H. Taylor. (See illustration.)
-38½	...	...	Jouaka Land . .	Royal Artillery Mess at Attock.
-37	9	...	?	Major J. C. Shirres, D.S.O.
38¾	9.75	9.5	Chita Oapar Range, near Attock	Royal Artillery Mess, Woolwich, Major C. F. Massey.
36¾	9	9	Hills north-west of Peshawur	Mess of 60th Rifles, Lord Walter Fitzgerald.
35½	10½	16	Gulran, Afghanistan .	Dr. J. Aitchison, British Museum.
-35½	10½	20¾	?	Mess, 21st Punjab Infantry.
35½	10½	9½	Punjab	Major F. H. Taylor.
35	11	14	Near Cabul . . .	Major J. W. M. Cotton.
34½	8½	16	Sind	L. Napier.
33½	9½	12½	Salt-Range . . .	A. O. Hume, C.B.
33½	9½	8½	?	Capt. R. L. Tottenham.
32½	10	11½	?	Sir Victor Brooke's Collection.
32½	7¾	12	Punjab	G. Blois Johnson.
32½	10	11½	?	Hume Collection, British Museum.
31½	9½	16¾	Salt-Range . . .	Capt. H. W. Codrington.
-31	10½	...	Punjab	Major-General Alexander A. A. Kinloch.

(b) URIAL (*Ovis vignei cycloceros*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
31	9 $\frac{1}{2}$	14 $\frac{1}{2}$	Punjab . . .	Major R. H. Rattray.
30 $\frac{1}{2}$	9 $\frac{1}{2}$	20 $\frac{1}{2}$	Salt-Range . . .	Sir Victor Brooke's Collection.
30 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	Col. J. Biddulph.
-30	8 $\frac{1}{2}$	6 $\frac{1}{2}$	?	Dublin Museum.

Head of Male Urial. Major F. H. Taylor's specimen.

29 $\frac{1}{2}$	10 $\frac{1}{2}$		Salt-Range . . .	H. C. V. Hunter.
29 $\frac{1}{2}$	10 $\frac{1}{2}$	16 $\frac{1}{2}$	Sind Hills . . .	Major C. S. Cumberland.
29 $\frac{1}{2}$	9	. .	Sheik Budin, near Dera Ismail Khan	Capt. Harry V. Brooke.
28 $\frac{1}{2}$	9	15 $\frac{1}{2}$	Kusan, Afghanistan . .	Dr. J. Aitchison, British Museum.
-27 $\frac{1}{2}$	. .	...	Afghan Hills . . .	Col. J. Biddulph.
26 $\frac{1}{2}$	9 $\frac{1}{2}$	12	Salt-Range . . .	Capt. B. L. Carew.
-26	..	..	Sind . . .	J. D. Inverarity.
-26	..	. .	Salt-Range . . .	Major-General Alexander A. A. Kinloch.
25 $\frac{1}{2}$	8 $\frac{1}{2}$	14 $\frac{1}{2}$	Punjab . . .	Dr. Percy Kendall.
25 $\frac{1}{2}$	9 $\frac{1}{2}$	13 $\frac{1}{2}$	Salt-Range . . .	Sir Edmund G. Loder, Bart.

(b) **URIAL** (*Ovis vignei cycloceros*)—*continued*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25½	9½	17½	Kohrod, Persia . . .	Sir Victor Brooke's Collection.
24	8½	13	Salt-Range . . .	Col. J. Biddulph.
21½	9¾	15	?	Lieut.-Col. H. Wade-Dalton.

(c) **KELAT RACE** (*Ovis vignei blanfordi*).

Possibly inseparable from the last, in which case the name *blanfordi* should supersede *cycloceros*, which was really given to specimens of *typica*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37½	10¼	11	Haji Khan, Kelat, 3000 ft.	A. O. Hume, C.B.
36	9¼	17	Kelat	Do.
31½	9½	13¾	Do. . . .	Hume Collection, Brit. Museum.
28½	9	10	Baluchistan . . .	Col. J. Biddulph.
25½	9¼	10¾	Do. . . .	Lieut.-Col. L. L. Fenton.

ARMENIAN MUFLON (*Ovis orientalis*).

This sheep differs from all the preceding species by the absence of horns in the females; the horns of the males being not unlike those of the urial, but curving backwards, so that their points are situated behind the neck instead of beneath the eyes. General colour of upper parts some shade of yellow or foxy red; the under parts and lower portions of the legs white. Height at shoulder about 2 feet 9 inches.

Distribution.—The mountains of Armenia, Eastern Persia, and Asia Minor.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40¼	10½	5½	?	W. Burchart Barker, British Museum.
36¼	10½	5¾	?	British Museum.
36	10¼	15	Persia	Hon. Walter Rothschild.
30½	10½	18	?	Sir Victor Brooke's Collection.
26½	8½	12½	Cilician Taurus . .	C. G. Danford.
¹ 24½	9¼	11½	Persian Frontier . .	Prince Demidoff.
24	9½	17	Asia Minor . . .	Col. J. Biddulph.
¹ 23¾	9½	13½	Persian Frontier . .	Prince Demidoff.
23¾	9½	11¾	Persia	Major C. S. Cumberland.

¹ Determination provisional.

Head of Male Cyprian Mufion. (From Biddulph, *Proc. Zool. Soc.* 1884.)

CYPRIAN MUFLON (*Ovis orientalis ophion*).

A small local race of the preceding distinguished by certain differences in coloration, and the complete rounding-off of the front outer angle of the horns of the male. This is the smallest of the wild sheep, and comparatively a rare trophy. Height at shoulder about 28 inches. The horns closely resemble those of the Armenian race in general characters, but are less massive, and curve gradually from the base, instead of diverging nearly straight outwards, as is generally the case in the latter. The type specimen of the species is preserved in the Berlin Museum.

Distribution.—The Tröodos Mountains of Cyprus.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25	8	15 $\frac{3}{4}$ (weight 5 stone)	Tröodos Mountains	H. Williamson.
24	8	4 $\frac{1}{2}$	Do.	The late Lord Lilford.
23 $\frac{1}{2}$	8.15	12.20	Do.	Col. J. Biddulph.
23	7	5 $\frac{3}{4}$	Do.	British Museum.
22 $\frac{1}{8}$	7 $\frac{1}{2}$	6	Do.	Gen. Sir R. Biddulph, British Museum.
22 $\frac{1}{2}$	8	12 $\frac{3}{4}$	Do.	Sir Victor Brooke's Collection.
17 $\frac{1}{2}$	8	1 $\frac{1}{2}$	Do.	Dublin Museum.
16	7 $\frac{1}{2}$	16 $\frac{1}{2}$ (weight 4 stone)	Do.	Hon. Walter Rothschild.

Head of Male European Muflon.

From a specimen in the British Museum, shot by Ford G. Barclay.

EUROPEAN MUFLON (*Ovis musimon*).

The large light-coloured saddle on the otherwise dark summer coat of the rams of this handsome and well-known little sheep is so distinctive of the species that nothing in the way of description need be attempted in this place. It may be observed, however, that the ewes are generally hornless, and that the horns of the rams curve forwards so as to have their tips below the eyes, and are comparatively massive, with the wrinkles of a type somewhat different from that obtaining in the Armenian sheep. Height at shoulder about 27 inches.

A good account of muflon-shooting will be found in Mr. E. N. Buxton's *Short Stalks* (first series).

Distribution.—At the present day the islands of Sardinia and Corsica.

Length on front curve.	Circumference	Tip to Tip.	Locality.	Owner.
34½	8½	16½	Sardinia	W. Moncreiffe.
30½	8½	11	Do.	C. Sloane Stanley.
30½	8½	14	Do.	Rhys Williams.

EUROPEAN MUFLON (*Ovis musimon*)—*continued*.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29 $\frac{3}{4}$	8 $\frac{5}{8}$	8 $\frac{3}{8}$	Sardinia . . .	Rhys Williams.
29 $\frac{3}{4}$	8	12 $\frac{1}{2}$	Do. . . .	C. Sloane Stanley.
29 $\frac{3}{4}$	8	...	Do. . . .	J. D. Cobbold.
29 $\frac{5}{8}$	8 $\frac{3}{4}$	11	Do. . . .	Hon. R. A. Ward.
29	8 $\frac{3}{4}$	11	Do. . . .	W. Moncreiffe.
28 $\frac{7}{8}$	8 $\frac{1}{8}$	21	Do. . . .	E. N. Buxton.
28 $\frac{3}{4}$	9	10	Do. . . .	Ford G. Barclay.
28 $\frac{1}{4}$	9 $\frac{5}{8}$	9 $\frac{3}{8}$	Do. . . .	Edinburgh Museum.
27 $\frac{7}{8}$	8 $\frac{3}{4}$	5 $\frac{1}{4}$	Do. . . .	W. E. Pease.
27	9 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
27	8 $\frac{1}{2}$	10	Do. . . .	British Museum.
27	8 $\frac{3}{4}$	11 $\frac{1}{2}$	Do. . . .	Rhys Williams.
-26 $\frac{5}{8}$	8 $\frac{1}{2}$	9	Do. . . .	H. Brinsley Brooke.
-26	10 $\frac{3}{8}$	10 $\frac{1}{2}$	Corsica . . .	Capt. John Marriott.
25 $\frac{1}{2}$	8 $\frac{3}{4}$	6	Sardinia . . .	A. Y. Lethbridge.
25	8 $\frac{1}{4}$	10	Do. . . .	Hon. Walter Rothschild.
24 $\frac{1}{2}$	9 $\frac{1}{8}$	9 $\frac{7}{8}$	South-West Sardinia .	Sir Victor Brooke's Collection.

DOMESTIC SHEEP (*Ovis aries*).

The history and ancestry of the various breeds of domestic sheep are lost in the mists of antiquity, and naturalists are totally unable to point to the wild stock from which any or all of them are derived. This is the more to be regretted, seeing that the Swedish breed is the type of the genus *Ovis*. Most domesticated breeds differ from wild sheep by the woolly nature of their coat ; but since hairy tame sheep are met with in several uncivilised countries, this point of difference is of comparatively little importance. More weight has been attached to the great length of the tail, which is much longer than even that of the arui ; and, as mentioned above, that species is almost certainly not the father of the domesticated sheep. There is, however, some degree of probability that the long tails of the domestic breeds are due to a kind of degeneration. And if this be really the case, their ancestry

might be looked for among the mufions or urial or some allied extinct form, since the horns of most breeds approximate to the mufion type. The presence of horns in the females of many breeds, Dorsetshire, for example, may be either an inherited character, or a redundancy of a nature similar to that which has produced four, or even five, horns in the males of certain oriental breeds. Some eastern sheep, like the Wallachian, have further departed from the mufion type by the development of upright corkscrew horns comparable with those of the markhor or kudu.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39½	8¾	21	?	H. E. Surtees.
37	8½	20	Loch Awe, N.B.	H. Murray.
35½	8	16¾	?	Sir Victor Brooke's Collection.
33	11	22½	Yarkand . . .	Hume Collection, Brit. Museum.
32	8½	27¾	Do. . . .	Do.
28¾	8	21½	Scotland . . .	Rowland Ward.
22½	9½	20½	Yarkand . . .	Hume Collection, Brit. Museum.
22½	9½	22½	Do. . . .	Do.
18	8¾	16½	Fezzan . . .	British Museum.

Abnormally-horned Specimens.

Length on outside curve.	Circumference.	Tip to Tip.	Number of Horns.	Owner.
20½ + 16	6 + 4¾	15½	Four	Sir H. B. Meux, Bart.
19¾ + 14	6½ + 4½	21 + 16	Do.	P. C. Millbank.
17¾ + 14½	7½ + 4¾	4½ + 6¾	Do.	Hume Collection, British Museum.
17 + 11¾	6¾ + 5	6 + 8½	Do.	British Museum.
13½ + 10¾	5¾ + 4½	...	Five	Hume Collection, British Museum.
13 + 9¾	7½ + 5	14¾	Four	A. O. Hume, C.B.
12 + 9¾	6½ + 4	17½	Do.	Do.

The following specimens belong to the Wallachian breed :—

Length on the curve.	Length in a straight line	Girth.	Tip to Tip.	Owner.
33	17½	7½	19½	H.R.H. le Duc d'Orléans.
32	24	7½	38	Do.

Head of Bull Musk-Ox.

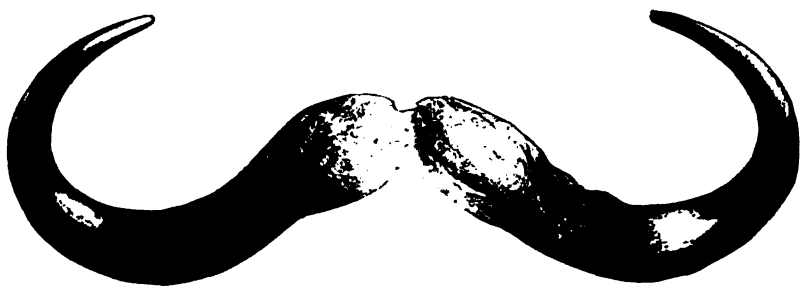
MUSK - OX (*Ovibos moschatus*).

In spite of its name, this Arctic ruminant has no near affinity with the members of the ox tribe, the molar teeth being more like those of the sheep and goats, the muzzle, except for a small strip between the nostrils, hairy, and the tail reduced to a mere stump concealed among the long hair of the hind-quarters. On the other hand, the resemblance to the sheep is not very close, the horns, which in old males nearly meet in the middle line of the forehead, being of a totally different form and structure, and the skull likewise very distinct. In the males the horns are much flattened and expanded at the bases, after which they are bent suddenly down behind the eyes, to curve upwards again at the tips. In the females they are much smaller, less expanded, and not approximated at their bases. In both sexes their texture is coarse and fibrous, and their colour yellow. The long coat of dark brown hair depending from the back and sides like a mantle affords an adequate protection against the rigors of an Arctic winter ; and the broad spreading hoofs, with hair on their under surface, give a firm

foothold on snow and ice. Height at shoulder about 4 feet; weight about 8 to 9 cwt.

Distribution.—Arctic America, approximately north and east of a line drawn from the mouth of the Mackenzie River to Fort Churchill on Hudson Bay, Greenland, and Grinnell-land, in lat. $32^{\circ} 27'$; approximate southern limit lat. 40° N.

Length on outside curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
-29 $\frac{1}{2}$	13	...	?	W. W. Hart.
27 $\frac{1}{2}$	10	27 $\frac{1}{2}$	Barren Grounds of Northern Canada	David T. Hanbury.
27 $\frac{1}{2}$	12 $\frac{1}{2}$	27	Do.	Earl of Lonsdale.
27	9 $\frac{1}{2}$	25 $\frac{1}{2}$	Do.	David T. Hanbury.
26 $\frac{1}{2}$	11	27	Do.	Warburton Pike.
26 $\frac{1}{2}$	12 $\frac{1}{2}$	...	North America	J. Rae, British Museum.
26 $\frac{1}{2}$	13 $\frac{1}{2}$	27 $\frac{1}{2}$	Do.	British Museum.
24 $\frac{3}{4}$	11	25 $\frac{1}{2}$	Barren Grounds of Northern Canada	Warburton Pike.
24 $\frac{1}{2}$	7 $\frac{1}{2}$	19	Do.	J. Talbot Clifton.
24 $\frac{1}{2}$	10 $\frac{1}{2}$	26	Do.	Hon. Walter Rothschild.
24	20 (circumference)	30	North America	Earl of Lonsdale.
24	9 $\frac{3}{4}$	23 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
22 $\frac{3}{4}$	9 $\frac{1}{2}$	19 $\frac{1}{2}$	Grinnell-land	Col. W. H. Fielden, British Museum.
21 $\frac{1}{2}$	9	27	?	Dublin Museum.
♀ 18 $\frac{1}{2}$	4 $\frac{1}{2}$	...	North America	A. G. Dallas, British Museum.
♀ 18 $\frac{1}{2}$	4 $\frac{1}{2}$	...	Do.	Do.



Horns of Cape Buffalo (F. H. Barber's specimen).

CAPE BUFFALO (*Bos caffer*).

Inyati of the Swazis and Zulus.
Mbogo and *Nyati* of the Swahilis.
Nari of the Basutos.

Nadi in the Barotse and Lake
 N'gami countries.
Mboa and *Nyati* in the Chilala and
 Chibisa countries.

Among the distinctive features of this splendid bovine may be noted the enormous helmet-like mass formed by the closely approximated bases of the horns in old bulls, the backward inclination and comparatively slight angulation of the horns themselves, the shortness of the face, and the great width and size of the heavily fringed and flapping ears. In colour both the skin and the sparse hairs with which it is clothed are for the most part jetty black; the hairs themselves being directed uniformly backwards from the nape to the rump. Height at shoulder about five feet.

Distribution.—Southern Africa from the Cape to the southern bank of the Congo on the west side, and approximately to the neighbourhood of the Victoria Nyanza on the east side of the continent. Northwards of this it not improbably gradually passes into the Abyssinian buffalo. Except on the Zambesi, Chobe, and some neighbouring rivers, buffaloes have now become very scarce in South Africa. But between Umtali and the east coast at Beira, and also from the latter station to the mouth of the Zambesi, they are to be met with in vast herds; and a few years ago existed in countless numbers. Here they are much protected by the unhealthy nature of the country, which is deadly to Europeans, except between the end of May and November. Save for a few protected

herds in the Addo bush, the Knysna and Zitzikamma forests, and thickets of the Fish and Sunday rivers, the species has long since been exterminated in the Cape. It is even rare and local in British East Africa, where, as in other districts on the eastern side of the continent, the rinderpest has of late years played sad havoc with the herds.

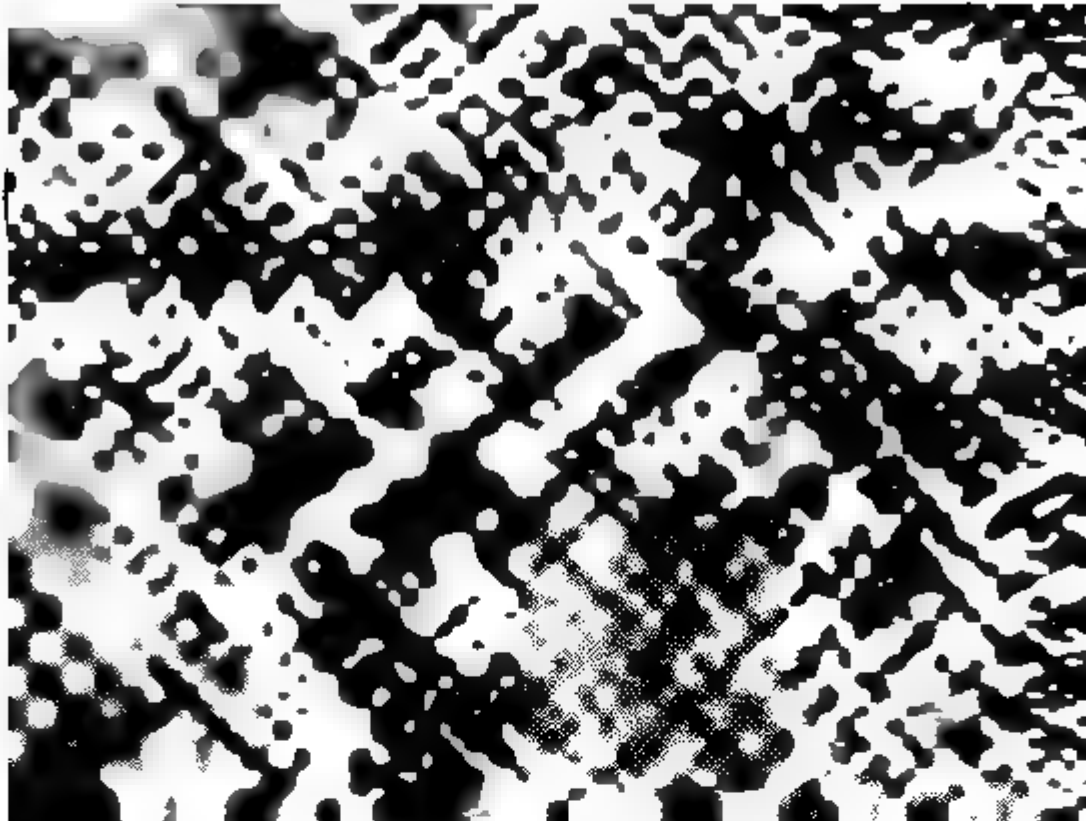
Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
-49½	43½	30½	12	Sabi River . .	F. H. Barber. (See illustration.)
49	44½	40½	11½	Limpopo . .	Sir Richard Glyn, Bart.
-48½	44½	36	10	Chiromo, B.C.A. .	H. C. Macdonald.
47	41	28½	12	Limpopo . .	The late W. F. Webb.
47	40½	...	12½	East Africa . .	F. J. Jackson, C.B.
...	40½	26	...	Do. . .	Prince Boris Czetwzynski.
46½	44½	37½	6½	Pungwe . .	C. M. Swire.
45½	41½	37½	...	South Africa . .	British Museum.
45½	40	28½	12	Nyasaland . .	F. Vaughan Kirby.
45½	41	30	...	East Africa . .	W. Astor Chanler.
45½	...	...	11½	Kilimanjaro . .	H. C. V. Hunter.
-45	39½	36½	14	East Africa . .	Count Scheibler.
-45	...	...	...	Nyasaland . .	S. Pulley.
44½	39½	27½	11½	East Africa . .	Sir Robert Harvey, Bart.
44½	39½	29	12	Pungwe . .	F. S. Staples.
44½	39½	29	14	Near River Ramokwebani, S. Africa	F. C. Selous.
44½	...	37½	12	East Africa . .	F. Charrington.
44	40½	37½	12	Do. . .	Capt. R. A. J. Montgomerie, C.B., R.N.
-44	40	...	11½	South Africa . .	J. Lamont.
-44	37½	14	...	Chiringoma, P.E.A.	F. Vaughan Kirby.
43½	37½	26½	12½	East Africa . .	Hon. Walter Rothschild.
43½	38½	25½	9	Pungwe . .	H. R. Holden.
43½	38½	24½	13½	South Africa . .	Sir John Willoughby, Bart.
43	37½	29½	14	Do. . .	C. D. Rudd.
42½	38	33½	9½	East Africa . .	E. J. L. Berkeley.

CAPE BUFFALO (*Bos caffer*)—*continued*.

Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
-42½	...	...	13	Manicaland . . .	F. Lean.
-42½	36½	29	14½	E. C. Africa . . .	James J. Harrison.
42½	36¾	29½	12½	?	Sir Victor Brooke's Collection.
42	38	35½	9	East Africa . . .	Lord Delamere.
42	37½	26½	11	Pungwe . . .	Capt. F. H. Lehmann.
42	37	30½	10½	Barotseland . . .	E. D. Scott.
-42	36	19	16	?	Mr. Justice Hopley.
41½	37½	34½	10	Pungwe . . .	R. H. Venables-Kyrke.
41½	36½	28	...	South Africa . . .	British Museum.
-41½	39	39	14½	South-east Africa . .	James J. Harrison.
41	38	35	8½	East Africa . . .	Lord Delamere.
41	36¾	37	11	Zambesia . . .	Comdr. A. T. Hunt.
41	36	30	11½	?	Rowland Ward.
41	35½	28½	...	Mashonaland . . .	F. C. Selous, British Museum.
41	36½	26½	9½	Pungwe . . .	Capt. Lord Douglas Compton.
-40½	35	19½	13½	Do. . . .	Count E. Hoyos.
40½	36¾	25½	9½	Do. . . .	Marquis of Hamilton.
-40½	36	35	15	South Africa . . .	A. Ohlsson.
-40½	36	20½	12	Lower Shire . . .	Staff-Surgeon J. Dowson, R.N.
-...	36	21	...	East Africa . . .	Sir John Willoughby, Bart.
40	37	35	...	Do. . . .	Gen. Sir Lloyd William Mathews.
40	35¾	...	14½	Do. . . .	F. J. Jackson.
9 40	34½	21	8½	Pungwe . . .	J. W. Allen.
40	35	21½	10	Matabeleland . . .	Major James Grant.
40	34½	21½	8	Pungwe . . .	C. C. Gouldsmith.
39½	34½	9½	14	Do. . . .	G. L. Bonham.
39½	35	34½	9	Do. . . .	R. Hughes.
39.12	37	36.11	12	British East Africa .	Prince Henry of Liechtenstein.
39	36	35½	12	Zululand . . .	A. J. Brandon.

CAPE BUFFALO (*Bos caffer*)—*continued*.

Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
39	34½	22½	10	Mashonaland . .	A. Neilson.
39	34½	27	11½	Benguela . .	G. W. Penrice.
39	34	19	10½	Shiré Valley . .	H. H. Williams.
38½	33¾	27	9½	Pungwe . .	R. K. Micklethwait.
38½	32½	19¾	13	?	Sir Edmund G. Loder, Bart.
38½	33½	23½	9½	Shiré Valley . .	C. C. Bowering.
38	33½	26½	8	Pungwe . .	A. Cameron.
38	33½	31½	14¾	?	Julius Jeppe.
38	32½	20¾	11	?	Do.
38	34½	31½	10½	?	F. Watkins.
37½	33¾	30	10	British Central Africa	J. E. Gough.
37½	31¾	25	11¾	Shiré Valley . .	Alex. R. Alston.
37½	33½	32¾	12½	East Africa . .	Sir John Kirk, K.C.B.
37½	31¾	23½	13	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
37	32	16½	9½	Pungwe . .	Viscount Ennismore.
37	33	30½	(about) 10½	Goronza Plain, P.E.A.	Earl of Dunmore.
37	31½	21	11½	?	L. Rawstorne.
37	30½	19	10	South Africa . .	R. A. Cooper.
♀ 36½	33	26½	5½	Mozambique . .	F. Vaughan Kirby.



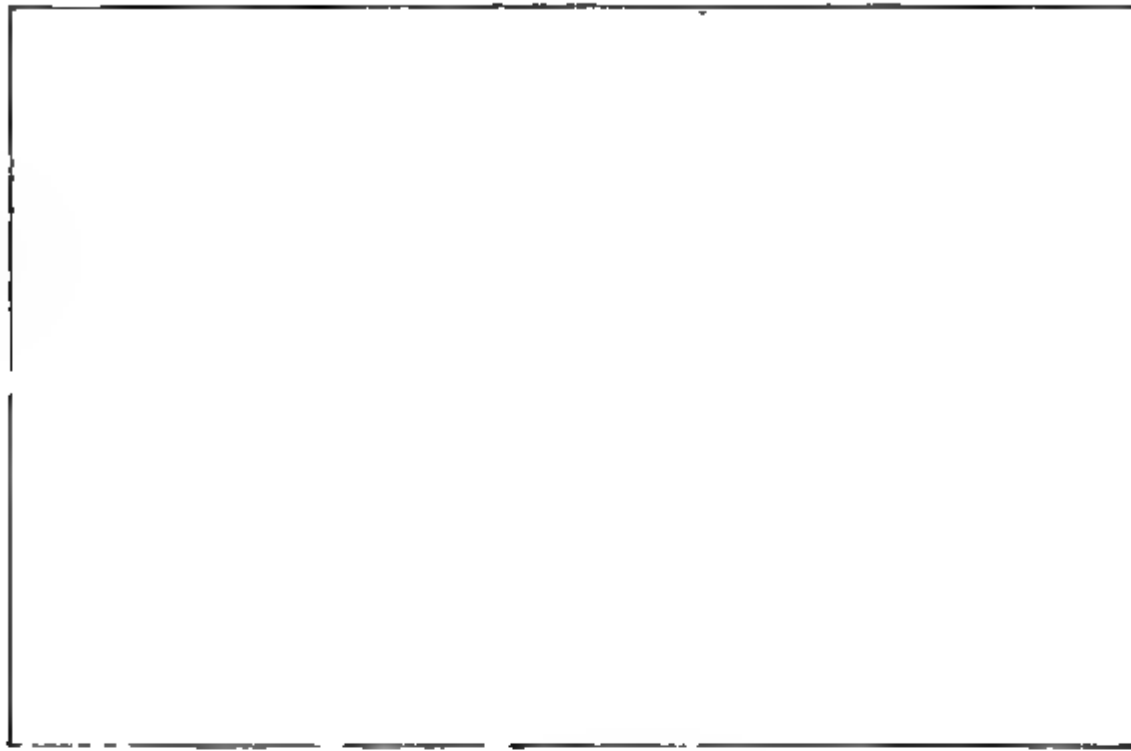
Skull and Horns of Abyssinian Buffalo.

ABYSSINIAN BUFFALO (*Bos caffer equinoctialis*).

A smaller animal than the last (height at shoulder about 4 feet), with the general colour blackish or tawny brown, tinged locally with rufous, and tending to grayish on the legs. Horns smaller, much more flattened at the bases, where they are more widely separated, and in some, although not all, cases retreating less markedly behind the plane of the eyes. The fact that in East African specimens of the Cape buffalo the horns are usually less rugged than in more southern examples, tends to confirm the view that the present animal should be regarded as a variety rather than as a species.

Distribution.—From Abyssinia and southern Somaliland through the Egyptian Sudan for a considerable distance up the White Nile; but the southern limits, if definable, not yet determined.

Greatest Width.	Tip to	Width of	Locality.	Owner.
Outside.	Inside.	Tip.	Palm.	
40	37	32	11½	Abyssinia . . . E. Lort-Phillips.
37½	34½	34½	8½	Upper Basaland . . J. Menges.
36	29	24	...	Mount Elgon, East Africa . . . E. Gedge.
32	28	22	6½	Basé Country . . . The late F. L. James.
31½	28½	25½	8½	Settite River . . . Col. Ralph Vivian.
31½	26½	21½	9½	Bogosland . . . G. P. V. Aylmer and W. D. James.
31½	26½	24½	...	Do. . . British Museum.
31	28½	21½	11	Abyssinia . . . Sir Edmund G. Loder, Bart.
-30½	26½	20½	10½	Settite River . . . Count T. Palffy.
30½	23	20½	8½	Sudan . . . Lieut.-Col. Hon. W. Coke.
-9 23½	20½	16½	5½	Lower Basaland . . J. Menges.



Horns of old Male Senegambian Buffalo, from the type specimen
in the British Museum.

SMALLER AFRICAN BUFFALOES.

Lake Tchad Buffalo (*Bos caffer brachyceros*).

Senegambian Buffalo (*Bos caffer planiceros*).

Dwarf Congo Buffalo (*Bos caffer nanus*).

Despite the enormous differences, alike in size, colour, and the form of the horns, between the little red buffalo of the Congo and its gigantic black cousin of the Cape, such a gradual and apparently complete transition can be traced from the one type to the other, that both seem local modifications of one very variable animal. In the dwarf buffalo of the Congo the colour of the hair is red or yellow, the ears are fringed with very long hair, and the horns are much flattened at the base, with long smooth tips directed upwards. This type may be traced, with some modifications, to the Gaboon and Gambia; but in the interior of Senegambia it apparently passes into the larger brown buffalo, with more laterally expanded and recurved horns, known as *B. caffer planiceros*. And this latter is, in its turn, very close to the Abyssinian buffalo (*B. caffer æquinoctialis*) of East Central Africa, which is nearly allied to the typical Cape form. Another type is indicated by the Lake Tchad buffalo (*B. caffer brachyceros*), first discovered by Denham and Clapperton. In height the Congo dwarf buffalo only reaches some 42 inches at the shoulder.

SMALLER AFRICAN BUFFALOES—*continued.*

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
23½	15	10	Gold Coast . . .	Major G. S. C. Jenkinson.
23	16½	8½	Nigeria . . .	Julius Jeppe.
21½	15½	4	Do. . .	Capt. C. A. Wilding.
21½	12½	2½	West Africa . .	British Museum.
21	15	9½	Nigeria . . .	A. Ohlsson.
18½	10½	5½	Central Africa . .	Capt. Denham and Col. Clapperton, Brit. Museum.
18	16½	17½	Victoria Island, Lower Niger	R. H. Monck-Mason.
17	18½	19½	Nigeria . . .	A. W. M. Brodie.
♀ 17	11½	6½	Central Africa . .	British Museum.
17	12	14½	Nigeria . . .	P. A. Clive.
16½	10½	6½	Jebba, Nigeria . .	Capt. A. H. Festing.
15½	11	9½	Nigeria . . .	Sir Edmund G. Loder, Bart.
15	6½ ¹	14	Do. . .	Major A. J. Arnold, D.S.O.
14½	11½	8½	Gaboon . . .	Dr. Percy Rendall.
14½	8½	7½	Sette Cama, W. Africa	British Museum.
14½	12½	10½	?	Sir Victor Brooke's Collection.
13½	10½	28½	Gambia . . .	Late Earl of Derby, Brit. Museum.
♀ 13	10½	10½	Nigeria . . .	Julius Jeppe.
♀ 11½	9½	...	Lokoja . . .	Major A. J. Arnold, D.S.O., Brit. Museum.
♀ 11	8½	10	West Africa . . .	Sir Edmund G. Loder, Bart.
♀ 9½	7½	8½	Do. . .	Hon. Walter Rothschild.

¹ Width of palm.

Skull and Horns of Congo Buffalo, from Major A. J. Arnold's specimen.

Head of Indian Buffalo. Shot by the Maharaja of Kuch Behar.

INDIAN BUFFALO or ARNA (*Bos bubalis*).

No one is the least likely to confuse this animal with the Cape species. Both belong, indeed, to the same group of the genus *Bos*, and have the rounded upper portion of the head and angulated horns. In the Indian species, however, the head is much longer, the ears are narrower and less heavily haired, and the horns of the male are widely separated on the forehead, and totally different in form. Two types of horns may be recognised, one very massive, and curving regularly up from each side of the head in a subcircular manner; the other much slenderer, though quite as long often, directed for the greater part of their length almost straight out from the head, and always with a wider spread; these latter horns being those of females. Height at shoulder about 6 feet 2 inches; girth behind shoulder, 10 feet 8 inches. In a bull shot by the Maharaja of Kuch Behar the length from the nose to the tip of the tail was 14 feet 2 inches, and to the base of the tail 11 feet; the maximum girth being 10 feet 8 inches, and the weight of the head when cut off, 158 lbs.

Distribution.—Typically India, where the range includes the plains of the Bramaputra and Ganges from the eastern end of Assam to Tirhut, and the Terai as far west as Rohilcund, the plains near the coast in Midnapore and Orissa, and also the plains in the Eastern

Central Provinces as far south as the Godaverī and Pranhitā rivers. A fawn-coloured race occurs in Assam, and smaller varieties in Ceylon and some of the Malayan islands. In a domesticated state, South Europe, Egypt, etc. Native name of male, *arna*; of female, *arni*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
77 $\frac{3}{8}$	17 $\frac{1}{8}$	...	...	...	?	British Museum.
-71	21 $\frac{1}{2}$	34 $\frac{3}{4}$	60	...	Assam . . .	Measured by A. O. Hume, C.B.; shot by A. Forbes.
- ♀ 70 $\frac{1}{4}$	18	...	64	78	Do. . . .	The late Sir A. Campbell-Orde.
65 $\frac{3}{4}$	20 $\frac{1}{4}$	...	...	...	Do. . . .	Col. J. Mathie, British Museum.
- ♀ 64 $\frac{1}{2}$	18	42 $\frac{1}{2}$	60	96	Do. . . .	The late Sir A. Campbell-Orde.
-63	18	...	...	60	Do. . . .	Do.
62	17	101	...	...	Do. . . .	Hon. Walter Rothschild.
♀ 61 $\frac{1}{4}$	15 $\frac{3}{4}$	22 $\frac{1}{2}$	45 $\frac{1}{2}$	...	Kuch Behar . .	H. H. the Maharaja of Kuch Behar.
♀ 61 $\frac{1}{2}$	16	22	48	...	Assam	Hon. Walter Rothschild.
60	22	...	64	72	Central Provinces .	B. Vincent.
60	20	40	52	...	?	Sir Edmund G. Loder, Bart.
58 $\frac{5}{8}$	12 $\frac{7}{8}$	...	...	...	?	British Museum.
58 $\frac{1}{2}$	12 $\frac{3}{4}$	...	...	...	?	Do.
♀ 58	15	46 $\frac{1}{2}$	59	...	Assam	Rowland Ward.
-57	18	...	...	...	Central Provinces .	J. D. Inverarity.
57	18 $\frac{1}{2}$	41 $\frac{1}{2}$	60	...	Do. . . .	Lieut.-Col. G. D. F. Sullivan.
-57	15	49	52	...	Assam	A. H. Straker.
- ♀ 57	14 $\frac{1}{2}$	53	61	...	?	Sir Edmund G. Loder, Bart.
-56	18	29 $\frac{1}{2}$	...	57 $\frac{1}{2}$	?	J. Whitaker.
56 $\frac{1}{4}$	21 $\frac{1}{2}$	40	52 $\frac{3}{4}$	...	Assam	A. O. Hume, C.B.
♀ 56	19 $\frac{1}{2}$	33 $\frac{3}{4}$	50 $\frac{1}{2}$	...	Kuch Behar . .	H. H. the Maharaja of Kuch Behar.
56	15 $\frac{1}{2}$	55 $\frac{1}{2}$	58	...	Do. . . .	Eyre Coote.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	29	44	...	?	J. Carr Saunders.
- ♀ 55	13 $\frac{1}{2}$	...	...	...	Bhutan Duars . .	Major-Gen. Alexander A. A. Kinloch.
55	22	55 $\frac{1}{2}$	62	66	Central Provinces .	L. T. Harris.
54 $\frac{1}{2}$	18 $\frac{1}{8}$	38 $\frac{1}{2}$	48 $\frac{1}{4}$	...	?	Hume Collection, British Museum.

INDIAN BUFFALO or AENA (*Bos bubalis*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
♀ 54½	12½	69½	70	...	Assam . . .	A. O. Hume, C.B.
54½	19	50	59	64	?	Viscount Powerscourt.
54	20	40	47	55	?	Do.
-54	23	39	...	59½	Burma . . .	Pegu Club, Rangoon.
53½	12½	23½	40½	...	?	Hume Collection, British Museum.
53½	12½	...	...	...	Nepal . . .	The late B. H. Hodgson, British Museum.
¹ 53½	23	30	42½	...	Kuch Behar . . .	H. H. the Maharaja of Kuch Behar.
-53	...	...	...	...	?	Lucknow Museum.
51½	18½	22	38½	...	Assam . . .	Sir Peter Walker, Bart.
-51½	19½	45½	50	...	Central Provinces . .	P. H. G. Powell-Cotton.
-50½	18½	55½	...	65	Patna State . . .	Lieut.-Col. F. H. Whitby.
♀ 50½	14½	40½	59	...	Central Provinces . .	Col. M. M. Bowie.
50	18½	48½	60	...	Do. . . .	Capt. C. F. Pinney.
50	13½	33	38½	...	Assam . . .	Noel Fenwick.
50	17	31½	50	...	Do. . . .	D. M. Lumsden.
-49½	17½	16½	37	...	Kuch Behar . . .	Count Scheibler.
48½	18½	33	51	...	Central Provinces . .	Col. F. C. Lister-Kay.
48½	19	27	47	...	Assam . . .	Major E. T. Paul.
-48½	13½	48½	57	...	Central Provinces . .	P. H. G. Powell-Cotton.
48	19	33	50	...	Do. . . .	Major H. C. Morland.
48	11½	29½	41½	...	Assam . . .	Surg.-Capt. A. Pearse.
-48	20	...	...	...	Do. . . .	H. Lennard.
♀ 47½	13½	23	47	...	?	Major C. B. Wood.
47	19	25	50	...	?	H. De Prée.
-46½	20	42½	55½	...	Kuch Behar . . .	Prince Hans Henry of Pless.
46½	20	42½	54	...	Assam . . .	Col. R. Pole-Carew, C.B.
46½	13½	32	41	...	Kuch Behar . . .	J. C. O'Donnell.
46½	17½	32	41	...	?	Dublin Museum.

¹ Measured round outside curves across skull, 9 ft. 11½ in. Another pair, 10 ft. 5 ins., circumference of horn at bone, 21 inches.

INDIAN BUFFALO or ARNA (*Bos bubalis*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
46	17½	32	41	...	?	Dublin Museum.
45½	13	39	49	...	Kuch Behar . . .	Lord Wolverton.
44½	14½	15½	38	...	Assam . . .	L. Truninger.
44	19	27½	46½	...	Do. . . .	Hon. S. Tollemache.
44	20	28½	44	...	Do. . . .	A. J. Walter.
♀ 43½	12½	38½	...	...	Durbangah . . .	Duke of Portland.

The following specimens are mostly from Ceylon :—

♀ 35	9½	31½	37½	...	Ceylon . . .	R. Wahrmann.
34½	15½	25½	35	...	Do. . . .	Earl Cairns.
♀ 33½	9	31½	37	...	Do. . . .	Do.
31½	16	28	...	38½	Do. . . .	Marquis Camden.
31½	16	...	47½	...	South Australia (introduced)	H. L. Heber Percy.
♀ 31½	11½	34½	...	38½	Ceylon . . .	Surg.-Major G. E. Hale, D.S.O.
30½	14	28	33½	...	Do. . . .	Count J. Potocki.
30½	14	22	32	...	Do. . . .	H. E. Lindsay.
30½	15	22	...	35½	Do. . . .	A. R. Hay.
29½	10½	26	32	...	Do. . . .	Capt. John Fuller.
26½	14½	28½	25	...	Formosa (introduced)	The late R. Swinhoe, British Museum.

Head of Bull Anoa, from life.

ANOA (*Bos depressicornis*).

The smallest member of the ox tribe, characterised by its straight, upright horns, and the frequent presence of white spots on the sides of the head or elsewhere. Although so different in the form of the head and horns from the adult Indian buffalo, the anoa is in these respects much more like the young of the latter; and they are connected to a considerable extent by the tamarau, or Philippine buffalo (*Bos mindorensis*) of the island of Mindoro. As in all the Oriental bovines, the hair of the fore part of the back is directed forwards in the anoa. Height at shoulder about 3 feet 3 inches.

Distribution.—The island of Celebes.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner
15 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	Celebes	Paris Museum.
12 $\frac{1}{2}$	6	6 $\frac{1}{2}$	Do. . . .	British Museum.
12 $\frac{1}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Do. . . .	Do.
11 $\frac{1}{2}$	5 $\frac{3}{4}$	7 $\frac{1}{4}$	Do. . . .	The late Gen. Hardwicke, British Museum.
10	5 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . . .	Sir Victor Brooke's Collection.
9 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	Do. . . .	Dublin Museum.
8 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.

Skull and Horns of Bull and Cow Bison, shot by St. George Littledale.

EUROPEAN BISON or ZUBR (*Bos bonasus*).

The great elevation of the fore-quarters, the mass of long hair clothing the head, shoulders, and fore-part of the body, together with the peculiar form of the head and horns, the latter of which are cylindrical, serve at once to distinguish the bison from the other members of the ox tribe. There is also a difference in the number of ribs between the bison and the more typical oxen, the number in the former varying from 14 to 15 pairs. In the European species the mass of hair on the fore-quarters is not so long as in its American cousin, the form of the skull is different, and there are marked points of difference in the general appearance which render it easy to distinguish between the two species. Some difference may be noted between Caucasian and Lithuanian specimens, but it is doubtful whether these are sufficient to indicate a racial distinction. Height at shoulder 6 feet 1 or 2 inches. In a bull killed by Mr. St. George Littledale, the length from the nose to the root of the tail measured 10 feet 1 inch, the height at the shoulder 5 feet 11 inches, and the approximate girth of the body 8 feet 4 inches.

Distribution.—At the present day restricted to the Caucasus and the forest of Bielowitzka in Lithuania; the herds in the latter district existing in a protected state. The name aurochs, so commonly applied to the bison, properly belongs to the extinct wild ox of Europe.

EUROPEAN BISON or ZUBE (*Bos bonasus*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widen inside.	Locality.	Owner.
18½	12½	13½	19½	Lithuania . . .	British Museum (presented by the Czar of Russia).
-18.2	10.8	17.5	20.14	Bielowitzka . . .	Prince Henry of Liechten- stein.
-18	12½	16	20	Caucasus . . .	St. George Littledale.
17½	10	18½	...	Bielowitzka . . .	Major Algernon Heber-Percy.
17.4	13.3	13.4	20.10	Do. . .	Prince Henry of Liechten- stein.
16½	12½	21½	24½	?	Sir Edmund G. Loder, Bart.
♀ 15½	8	6	...	?	Major Algernon Heber-Percy.
♀ 13	8½	9½	14	Caucasus . . .	St. George Littledale.



Skull and Horns of American Bison.

AMERICAN BISON (*Bos bison*).

Some of the points distinguishing this species from the European bison have been mentioned under the head of the latter, but it may be added that in the typical race of the former the horns are shorter, thicker, blunter, and more sharply curved. In the skull of the American animal the sockets of the eyes have a more tubular form. Height at shoulder about 6 feet; weight from 15 to 20 cwt.; an adult bull weighed by W. T. Hornaday scaled 1727 lbs.

Distribution.—The greater portion of Western North America, ascending to the Great Slave Lake, and descending to New Mexico and Texas; now nearly exterminated. American writers recognise two races (or species), the prairie bison (*B. bison typicus*) and the larger wood-bison (*B. bison athabascæ*) of the forest highlands of the North-West.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside spread.	Locality.	Owner.
-21½	15½		35	Northern Montana .	W. F. Sheard.
20½	15	.	outside 30½	Wyoming . . .	Hon. F. Thellusson.
-20½	16½	33½		?	W. H. Root.
-19	12½	.	..	W. Montana . . .	P. Liebinger.
18½	14½		16½	Do. . . .	The late J. S. Jameson.
18½	14	26½	29	Sioux Country . .	Sir Greville Smyth, Bart.
-18	14	.	.	Montana	F. Sauter.

AMERICAN BISON (*Bos bison*)—*continued*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
17 $\frac{1}{2}$	12 $\frac{3}{8}$	15 $\frac{1}{2}$	...	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
-17 $\frac{1}{2}$	12 $\frac{1}{2}$	...	...	S.-W. Montana . . .	Theodore Roosevelt.
17 $\frac{1}{2}$	12	...	25 $\frac{1}{2}$	Wyoming	H.R.H. le Duc d'Orléans.
17 $\frac{1}{2}$	13 $\frac{1}{2}$	21	...	?	Viscount Powerscourt.
17 $\frac{1}{8}$	11 $\frac{3}{8}$	10 $\frac{3}{8}$	17 $\frac{1}{8}$	?	British Museum.
-17	14	17 $\frac{1}{2}$	...	Yellowstone, Montana	Count E. Hoyos.
16 $\frac{5}{8}$	14 $\frac{1}{2}$	24	...	Bighorn Mts., Wyoming	Moreton Frewen.
¹ 16 $\frac{1}{2}$	12 $\frac{1}{2}$	19 $\frac{3}{8}$	...	Colorado	Sir Edmund G. Loder, Bart.
16 $\frac{1}{2}$	13 $\frac{1}{2}$	14 $\frac{1}{2}$	...	?	Duke of Portland.
16 $\frac{3}{8}$	15 $\frac{7}{8}$	25 $\frac{3}{8}$	...	Colorado	Sir Edmund G. Loder, Bart.
15 $\frac{1}{2}$	14 $\frac{3}{8}$	...	19 $\frac{3}{8}$	Wyoming	St. George Littledale.
-15.8	12.14	15	...	Indian Territory near Texas	Prince Henry of Liechten- stein.
14	...	12 $\frac{1}{2}$	...	North Park, Colorado	Col. Ralph Vivian.
13 $\frac{1}{2}$	13 $\frac{1}{2}$	17 $\frac{1}{2}$	...	?	G. Wrey.
13 $\frac{3}{8}$	12	...	...	?	Hon. Walter Rothschild.

¹ Wood Bison.



Skull of Male Yak. From a specimen in the British Museum,
presented by A. O. Hume, C.B.

YAK (*Bos grunniens*).

The plateau of Tibet is remarkable for the number of its peculiar mammals, among which is the yak. Apparently its nearest relatives are the bisons, but the yak has not the great elevation of the withers in comparison with the hind-quarters so distinctive of the latter, and the long hair forms a fringe on each side of the flanks, shoulders, and thighs, as well as a tuft on the chest, while the tail is clothed with a huge mass of similar long hair, forming, when cut off and mounted, the well-known "chowries." Yak horns are much larger than those of living bison, and have a totally different curvature; while there are also important differences in the skull. Height at shoulder from about 4 feet 10 inches to at least 5½ feet; girth behind shoulder, 9 feet 1½ inches; length from between horns to base of tail, 8 feet ½ inch;

tail 3 feet 2½ inches; from between horns to nose 1 foot 1½ inches (Capt. H. M. Biddis p.). Weights about 1140 lbs. Wild yak are uniformly blackish brown in colour, any trace of white indicating domestication, and probably cross-breeding.

Distribution.—The plateau of Tibet, part of the Kansu province of China, and Northern Ladak, at elevations between about 14,000 and 20,000 feet. The peculiar grunting cry from which the animal takes its name is developed only in the domestic breed.

Length in inches (male).	Crown to base.	Tail to tip.	Locality.	Owner.
39				Lucknow Museum.
39½	18½	26½	Kaenissen Waa .	A. O. Hume, C.B., shot by late A. Dalglish.
39½	17	19	Do. .	Hume Collection, Brit. Museum picked up by Mr. Carey.
35½	15	16	"	E. L. Phelps.
35½	14½	17	Tibet .	St. George Littlehale.
34	12	39½	Ladak .	Hon. Walter Rothschild.
22½	16½	18½	Do. .	Capt. H. M. Biddis.
32½	14	17½	Do. .	P. H. G. Powell-Cotton.
32	13½	15½	Do. .	H. C. V. Hunter.
32	14½	9	Do. .	L. Morse.
32	16	17	Do. .	P. Church.
31½	14½	18½	Chang Chenmo .	P. H. G. Powell-Cotton.
31½	16	16½	Do. .	Rowland Ward.
31	14	"	Do. .	Col. F. C. Lister-Kay.
31	13½	14	Ladak .	Arnold Pike.
30½	13½	10½	Do. .	Sir Robert Harvey, Bart.
30	13	15½	Chang Chenmo .	H. Z. Darrah.
29½	14	12	"	Hume Collection, British Museum.
29½	13½	11	Chang Chenmo .	Lieut.-Col. G. D. F. Sullivan.
29	15	9	Do. .	Sir Edmund G. Loder, Bart.
29	13½	13½	Ladak .	Arnold Pike.
28½	15	13	Do. .	G. B. Milne.
28½	15½	14½	Do. .	P. Church.
28	16	17½	Tibet .	Major-General Alexander A. A. Kinloch.

YAK (*Bos grunniens*)—*continued.*

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
28	13	28	Tibet	J. Bennett Stanford.
28	13½	29½	Near Manasarowar Lake	Capt. B. H. Boucher.
27½	11½	18½	?	The late B. H. Hodgson, British Museum.
27½	13½	16½	Tibet	Capt. C. B. Vandeleur.
27	13	15½	Ladak	Major C. S. Cumberland.
26½	13½	19	Chang Chenmo .	Col. J. Biddulph.
25½	12	16½	Ladak	Major J. A. Orr-Ewing.
25½	13	17	Do.	Capt. H. H. P. Deasy.
24½	11½	14	Tibet	T. W. Greenfield.
♀ 24½	8½	5½	Ladak	G. B. Milne.

Head of Bull Yak.

Head of Male Gaur.
(After Forsyth.)

GAUR (*Bos gaurus*).

This splendid bovine, the miscalled bison of Anglo-Indian sportsmen, is the typical representative of a group of three oriental species nearly related to the domestic ox, but presenting certain well-marked points of difference. Among these may be noted the shorter head and tail, the frequently elliptical section of the horns, and, above all, the presence of a more or less distinct ridge running from the withers to the middle of the back, where it terminates in a sudden step. In the gaur this ridge is very strongly developed, but the most distinctive feature of the animal is the great arch on the crown of the head between the horns, which bends forward to communicate a concave profile to the forehead. With the exception of the white "stockings"

common to all the members of the group, the colour of the gaur is uniform ; but the much flattened horns are of a peculiar yellowish green tint at the base. The height of adult bulls at the shoulder varies from about 6 feet to 6 feet 4 inches, though specimens of not more than 5 feet 5 or 6 inches are killed.

Distribution.—The forest hill-tracts of Peninsular India, Assam, Burma, and the Malay Peninsula, as well as the forests along the outer Himalaya as far west as Nepal. South of the Ganges, where it has not been exterminated, the gaur inhabits suitable districts in Chutia Nagpur, Orissa, the Northern Circars, Central Provinces, Hyderabad territories, and all the Western Ghats.

Length on outside curve of longest horn.	Circum- ference at base.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
-39½	20½	18½	...	43	Salwin, Burma	Bombay Natural History Society's Museum.
-39	19½	18½	32	...	N. Travancore.	Arthur W. Turner.
-35	18	...	...	...	S. India . .	The late General Douglas Hamilton.
34½	20	25	...	40½	Vardi Mullay .	Baron von Massow.
-34	19½	33½	...	...	?	Measured by Colonel J. Biddulph.
33½	18	24	...	41	Pulny Hills, Madura District	J. D. Goldingham, Bethnal Green Museum.
...	17½	28½	...	43½	Travancore .	H.H. the Maharaja of Travancore, G.C.S.I.
-...	17½	25	...	...	Do. .	Do.
33½	18½	25	33½	42½	Do. .	T. W. Greenfield.
-33½	21	...	32½	38½	Mysore . .	Surgeon-Captain C. W. H. Whitstone.
33½	18	23½	34½	...	Kuch Behar .	Maharaja of Kuch Behar.
33	17½	20½	32½	...	?	Capt. P. Z. Cox.
-33	14	...	...	34	Western Ghats	J. D. Inverarity.
32½	...	27	...	...	Do.	Lieut.-Col. L. L. Fenton.
-32	19	27	...	...	Assam . .	Major James Grant.
-32	18	...	...	...	Burma . .	Indian Museum.
31½	17½	21½	32½	...	Travancore Hills	A. O. Hume, C.B.
-31½	18	29	...	43	?	Bombay Natural History Society (<i>Proceedings</i>).
-31½	17	21	32½	...	?	Dublin Museum.
31½	17½	22½	27½	40½	Pulny Hills, Madura District	J. D. Goldingham, Bethnal Green Museum.
31	19½	24½	30½	37½	Mysore . .	Viscount Powerscourt.

GAUR (*Bos gaurus*)—*continued*.

Length on outside curve of longest horn.	Circum- ference at base.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
30½	19½	16	...	35	Travancore	Lord Douglas Compton.
30½	18½	22½	37½	...	Do.	A. T. Mackenzie.
30	19½	11	32½	..	Kuch Behar	H. H. the Maharaja of Kuch Behar.
-30	20	15	26	...	?	G. Beck.
-30	16	...	38	41	Central Provinces	Lieut.-Col. J. W. H. Flana- gan.
-30	19	16	32	...	Travancore	J. D. Rees.
29½	18½	30	34	...	?	Sir Edmund G. Loder, Bart.
29½	18½	25½	30½	...	Hassanoor Hills, S. India	{ Sir Victor Brooke's Collec- tion. (Shot by the late Gen. Douglas Hamilton.)
-29½	19	22½	31½	36½	Mysore	Captain M. M'Neill.
-29½	19½	16½	26½	...	Narbada Valley	Major-General Alexander A. A. Kinloch.
-29½	18	...	...	33	Central Provinces	J. D. Inverarity.
29½	17½	28½	39	...	Siam	A. Waley.
29½	17	32½	43	...	Coimbatore, S. India	P. Church.
29½	12½	...	18	...	Nepal	The late General Hardwicke, British Museum.
-29	22	...	...	...	?	Otho Shaw.
-29	17½	...	...	35	North Kanara	Lieut.-Col. L. L. Fenton.
29	16	30	...	41½	Assam	A. J. Walter.
28½	18½	14½	30	...	Travancore	Lord Wenlock, G.C.I.E.
28½	17½	23½	31	...	South India	Captain H. M'Micking.
28½	15½	18½	28½	...	?	Major-General Sir Arthur Ellis, K.C.V.O.
28½	18	15½	33½	...	Travancore	H. L. Cottingham.
28½	15½	17	27	...	?	Hume Collection, British Museum.
-28½	18½	28½	...	38½	Raipur, C.P.	Captain M. M'Neill.
28	18	22½	34½	...	Assam	Hon. S. Tollemache.
28	16	10½	24	...	Central Provinces	Martyn Kennard.
28	19½	34½	43	...	Upper Burma	C. W. A. Bruce.
28	16½	15½	...	31½	?	H. W. Keys.
28	15½	16½	...	31	Khandesh	A. Cumine.
-28	17½	17	...	36½	Mysore	Veterinary-Captain G. H. Evans.

GAUR (*Bos gaurus*)—continued.

Length on outside curve of longest horn.	Circum- ference at base.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
27 $\frac{3}{8}$	17 $\frac{1}{8}$	32 $\frac{1}{2}$	32 $\frac{3}{4}$	...	Central Provinces	Major C. S. Cumberland.
27 $\frac{3}{4}$	19 $\frac{3}{4}$	37	41	...	Kalkerray, S. India	Captain W. E. Fairholme.
27 $\frac{3}{4}$	18 $\frac{3}{4}$	24 $\frac{3}{8}$	30 $\frac{1}{2}$	...	?	Major G. A. L. Carew, D.S.O.
-27 $\frac{1}{2}$	20 $\frac{1}{2}$	26 $\frac{1}{2}$	...	36 $\frac{1}{2}$	?	Major-General W. Rice.
27 $\frac{1}{2}$	17	26 $\frac{1}{2}$	36	...	Assam	L. Truninger.
27 $\frac{1}{2}$	19	15	31 $\frac{3}{4}$	...	Travancore	Captain Hon. E. Baring.
27 $\frac{1}{2}$	17 $\frac{1}{2}$	20 $\frac{1}{2}$	35	...	Tezpore, Assam	A. Y. Thomson.
27 $\frac{1}{2}$	18 $\frac{1}{2}$	20 $\frac{1}{2}$	34	...	Travancore	Captain Hon. E. Baring.
-27	16 $\frac{3}{4}$	22	30 $\frac{1}{2}$	...	South India	H. W. Murray.
-27	15	...	17	...	Panarel, Central India	Captain A. Hicks-Beach.
26 $\frac{7}{8}$	15 $\frac{7}{8}$	16 $\frac{1}{2}$	27	...	?	Hon. Walter Rothschild.
26 $\frac{3}{4}$	14 $\frac{7}{8}$	13 $\frac{3}{8}$	24 $\frac{1}{2}$	...	Sahaydri Moun- tains, S. India	Captain W. Tompson, British Museum.
26 $\frac{1}{2}$	17	17 $\frac{1}{2}$	...	32 $\frac{1}{2}$	Central Provinces	Surgeon-Captain A. Pearse.
26 $\frac{1}{2}$	18 $\frac{1}{2}$	26 $\frac{3}{4}$	...	36 $\frac{1}{2}$	?	Major R. H. Fraser.
26	18 $\frac{1}{2}$	23 $\frac{3}{8}$	32 $\frac{3}{4}$	...	Central Provinces	G. de H. Smith.
26	19	16 $\frac{1}{2}$	32 $\frac{1}{2}$	...	Do.	Captain C. F. Pinney.
26	17 $\frac{1}{2}$	19 $\frac{3}{8}$	...	...	?	Lord Wolverton.
26	15	26 $\frac{1}{2}$	36	...	Central Provinces	Captain John Fuller.
26	15	33 $\frac{1}{2}$	...	40	Do.	C. F. Egerton.
26	17 $\frac{1}{2}$	27	36	...	Do.	Colonel M. M. Bowie.
26	18	23	35	...	Burma	Captain S. L. Robinson.
25 $\frac{1}{2}$	17	21 $\frac{1}{2}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	S. India	Captain C. S. Timins.
25	18 $\frac{3}{4}$	18 $\frac{1}{2}$	29	...	?	Lord Elphinstone.
25	18	23 $\frac{3}{4}$	33 $\frac{3}{4}$	...	Kanara	Captain G. J. Fitzgerald.
25	17 $\frac{1}{2}$	18 $\frac{1}{2}$	34	...	Central Provinces	Dr. W. P. Y. Bainbrigge.
24 $\frac{1}{2}$	15 $\frac{3}{4}$	24 $\frac{3}{8}$	34	...	?	H. De Pré.
-24	18	34	...	38 $\frac{3}{8}$	?	J. D. Inverarity.
-24	19	27	34	...	Burma	W. F. Loftus-Tottenham.
23	15	22	33 $\frac{1}{2}$	...	Assam	Major E. T. Paul.

GAUR (*Bos gaurus*)—*continued*.

Length on outside curve of longest horn.	Circum- ference at base.	Tip to Tip.	Widest inside.	Widest outside.	Locality	Owner.
♀ 22	10½	14½	27		?	H. De Prée.
♀ 20½	10½	12			Madras . .	Major J. W. M. Cotton.
♀ 19½	11½	. .			N. Kanara .	Lieutenant-Colonel L. L. Fenton.
♀ 24	13½	13	22	27	N. Travancore Hills	A. O. Hume, C.B. (See illustration.)

Skull and Horns of Cow Gaur, from A. O. Hume's specimen

Skull and Horns of Bull Gayal, from A. O. Hume's specimen.

GAYAL (*Bos frontalis*).

Chiefly known in a half-domesticated condition, the gayal is a rather smaller animal than the gaur, of a blacker colour, with a large dewlap, and with a straight line between the bases of the massive horns, which are more divergent, less curved upwards, more nearly cylindrical in section, and of a darker colour. The head, too, is much shorter, with the forehead very broad and flat.

Distribution.—Apparently the Tenasserim district in a wild state, but kept in a semi-domesticated condition by many of the hill-tribes of Assam and Chittagong. Gayal have been crossed with the American bison, the resulting progeny being fertile.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15	11½	26½	?	British Museum.
14½	13½	28	Tenasserim Hills	A. O. Hume, C.B. (See illus- tration.)
14	14	...	?	Indian Museum.
12½	13½	27½	?	British Museum.

Head of Male Burmese Banting. (From the *Proc. Zool. Soc.*, 1898.)

BANTING (*Bos sondaicus*).

The third and last member of the gaur group departs less widely from the type of the common ox than do the two others, the ridge on the withers being less developed, and the horns almost cylindrical. The cows, too, are always reddish coloured, although the bulls may be black, and in the latter sex at least there is always a large white patch on the rump. Very distinctive of the species is the presence of a horny shield on the crown of the head between the bases of the horns. Height at shoulder about 5 feet 9 inches.

Distribution.—Burma, the Malay Peninsula, Borneo, Java, Bali, and perhaps Sumatra. At least two distinct races of the banting are distinguishable. First, the true banting, or Java ox (*Bos sondaicus typicus*), from Java, and perhaps some of the other Malayan islands and the Peninsula. In this race the old bulls become of a deep blackish brown colour. The same tint is characteristic of the old male banting in Borneo, but the horns are directed more uprightly.

The second well-defined race (*B. sondaicus birmanicus*) inhabits Burma, and may extend northwards to Manipur. Old bulls retain the reddish tint of the cows throughout life, showing more or less of gray on the head.

Skulls of Gaur and Banting. Shot by Vet.-Capt. G. H. Evans.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.		Owner.
-33½	17	26½	35	Tammu, Burma	Upper	Surgeon-Capt. H. S. Wood.
-30	17	..	..	Java	. . .	Indian Museum.
-38½	17½	30½	36	Burma	. . .	Vet.-Capt. G. H. Evans.
-28½	15	26½	36½	Java	. . .	H. Van-Son.
26½	16½	21½	28	Do.	. . .	Sir Edmund G. Loder, Bart.
-26	18	17½	27	Burma	. . .	C. W. A. Bruce.
25½	16½	20½	26½	Siam	. . .	H. C. V. Hunter.
-25½	13½	29	32	Burma	. . .	W. H. Prendergast.

BANTING (*Bos sondaicus*)—continued.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
25½	19½	24½	30	Burma . . .	C. W. A. Bruce.
24¾	12½	15¾	24½	Java . . .	British Museum.
-24½	14½	30	35	Pegu . . .	Vet.-Capt. G. H. Evans. (See illustration.)
21⅞	12½	13⅞	19½	Borneo . . .	H. B. Low, British Museum.
20⅞	12½	18⅞	22½	Do. . . .	Do.
20	16	22¾	24½	Kudah, B. N. Borneo	H. L. Davies.
♀ 20	12	21½	28	Upper Burma . .	C. W. A. Bruce.
-19½	11½	17	20	Borneo . . .	Sir Edmund G. Loder, Bart.
19	11⅞	18	21⅞	Java . . .	The late H. J. H. Platt.
18	13½	12½	...	Borneo . . .	Sir Edmund G. Loder, Bart.
17⅞	10⅞	7⅞	14½	British North Borneo	W. B. Pryer, British Museum.
17½	10⅞	17½	20¾	Siam . . .	H. C. V. Hunter.
16½	10¾	9½	13⅞	Sarawak . . .	British Museum.
16½	12¾	17½	18½	N. Borneo . . .	A. D. Boden.
♀ 15½	7½	7½	16½	Tammu, Burma . .	Surgeon-Capt. H. S. Wood.
♀ 7½	7½	6¾	...	Java . . .	The late H. J. H. Platt.

DOMESTIC OXEN (*Bos taurus* and *B. indicus*).

The domesticated cattle of Europe are the descendants of the primitive wild ox, or aurochs (a name frequently misapplied to the bison), of Europe and North Africa (*Bos taurus primigenius*), now completely extinct in the wild state, although it survived on the continent till the Middle Ages. On the other hand, the humped oxen (zebu) of India and the Galla cattle of Africa (*Bos indicus*) appear to trace their origin to a totally distinct species, also extinct in the wild state.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
81½	18½	103½	...	N'gamiland . . .	The late W. C. Oswell.
-?	17	100	124	Do. . . .	A. Ohlsson.

DOMESTIC OXEN (*Bos taurus* and *B. indicus*)—continued.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
57	19½	82	...	Bechuanaland	Sir Edmund G. Loder, Bart.
56½	17½	76½	...	South Africa .	R. A. Cooper.
47	15½	21½	...	Abyssinia	The late H. Salt, British
44	12½	70½ (about)	...	(Galla Ox) ?	Museum. British Museum.
42½	23½	22½	...	Central Africa	The late Col. Denham, British
41½	14	52½	...	Madagascar .	Museum. Bethnal Green Museum.
40½	12½	60½	...	Vienna (Polish Bull)	British Museum.
38½	10½	54½	...	Italy . .	Bethnal Green Museum.
35½	12½	59½	...	Cape of Good Hope	Do.
30½	12½	35	...	Spain . .	Do.
29½	11½	28½	..	Gambia .	A late Earl of Derby, British
17½	10½	30½	...	Buenos Aires (Niata Cattle)	Museum. G. Claraz, British Museum.
17½	10½	25½	...	Gambia .	A late Earl of Derby, British
17½	10½	25½	...	India . .	Museum. British Museum.
12½	8	16½	...	Angola .	Sir Victor Brooke's Collection.
11½	7½	single horn	...	Nepal . .	The late B. H. Hodgson, British
					Museum.

The following specimens belong to the so-called Wild Cattle of certain British parks, which are, however, certainly the descendants of at least partially domesticated breeds.

Length on outside curve.	Circumference.	Tip to Tip.	Widest Inside.	Locality.	Owner.
18½	9½	36½	...	Chartley Park	Hon. Walter Rothschild.
18½	7	34½	...	Do.	Major James Grant.
18½	10½	20	21½	Chillingham Park	Earl of Tankerville, British
♀ 18½	7	10½	15½	Do.	Museum. Do.
15½	9½	17½	18½	Northumberland	Duke of Hamilton, British
15	7½	20½	...	Chartley Park	Museum. Captain G. W. Hill, R.N.

HIPPOPOTAMUS (*Hippopotamus amphibius*).

Swahili name <i>Kiboko</i> .	Abyssinian name <i>Gumare</i> .
Danakil name <i>Dul</i> .	Boer name <i>Zee-koe</i> .
Galla name <i>Robi</i> .	Swazi name <i>Imvubu</i> .
Basuto name <i>Ikubu</i> .	

Such a familiar animal as the uncouth and unwieldy hippopotamus—the largest member of the swine group—requires but little in the way of description here. It is widely distinguished from the pigs and warts-hogs by the broad and rounded muzzle, so unlike the disc-shaped snout of the latter; and consequently forms a family by itself. The tusks and molars are likewise of a totally different and distinctive type; while the feet have four sub-equal toes with symmetrical, rounded nails. In all its organisation the hippopotamus is beautifully adapted for a sub-aquatic life; the eyes and nostrils forming the highest points of the head, and thus allowing the creature to come up and breathe with the least possible exposure of its body. The weight of a full-grown bull hippo is at least three tons.

Distribution.—Formerly this animal frequented most of the rivers of Africa south of the Sahara, but it has long since been exterminated from the lower reaches of the Nile, and is daily becoming scarcer in the South African rivers. In the Zambesi, where it is less easily attacked than in the smaller rivers of Mashonaland, it is still abundant, as it also is in the Chobe and neighbouring rivers, as well as in Lake Ngami; and even in the lower reaches of the Orange River a few are still to be met with. North of the Zambesi these animals occur in great numbers. Hippos are chiefly hunted for the sake of their hides, which are manufactured into sjamboks, or raw-hide whips. Their tusks have also a certain commercial value, although not so great as formerly, when they were employed for artificial teeth.

In Liberia and some other parts of the West Coast there occurs the much smaller pigmy hippopotamus (*H. liberiensis*), an animal measuring only some six feet in length, and possessing more the habits of a pig. It also differs from the common species by having, as a rule, only one, instead of two, pairs of incisor teeth between the tusks.

A hippopotamus, shot on the Shiré River, British Central Africa, by F. Vaughan Kirby, measured as follows:

	ft.	in.		ft.	in.
Total length, nose to tail	14	2	Length of tusks	2	5
Tail	1	8	Circumference of tusks		8 $\frac{1}{4}$
Vertical standing height	3	10 $\frac{1}{2}$	Weight per pair	14 $\frac{1}{2}$	lbs.

These tusks measured 31 and $30\frac{1}{4}$ inches, with circumference $8\frac{3}{4}$ inches, after they were extracted from the skull.

Length round out- side curve of tusk.	Circumference.	Locality.	Owner.
¹ 51	9 (malformed)	S. E. Africa . . .	J. Lamont.
¹ 41	8 Do.	Tana River, East Africa	J. Benett Stanford.
¹ 38 protruding from jaw	...	Nyasaland . . .	Major P. W. Forbes.
¹ 37 $\frac{1}{2}$	8 $\frac{1}{2}$	Shiré River . . .	Comdr. A. T. Hunt.
32	9 $\frac{1}{2}$	Lunlaba, Central Africa	S. L. Hinde.
31 $\frac{3}{4}$	10 $\frac{7}{8}$	?	Sir Clement Hill, Bart.
31 $\frac{5}{8}$	9 $\frac{5}{8}$	?	Sir Edmund G. Loder, Bart.
² 31 $\frac{1}{4}$	...	S. E. Africa . . .	F. Vaughan Kirby.
30 $\frac{1}{2}$	9 $\frac{1}{2}$	St. Lucia Bay . . .	Hon. Charles Ellis.
30	9 (weight 15 lbs. pair)	Do. . . .	Do.
30	9	Shiré River . . .	Staff-Surgeon J. Dowson, R.N.
30	9	Zambesia . . .	E. W. Tompson.
-30	(weight 11 lbs.)	Katungas, Shiré River	E. B. Vertue.
29 $\frac{3}{4}$	8 $\frac{3}{4}$	Do.	F. C. Selous.
29 $\frac{1}{2}$	8	Do.	Dr. W. P. Y. Bainbrigge.
29	8	Do.	Do.
29	8 $\frac{1}{2}$	Shiré River . . .	F. Vaughan Kirby.
29	9 $\frac{1}{2}$	?	Rowland Ward.
27 $\frac{1}{8}$	...	Atbara River, North- East Africa	W. D. James.
27	8	East Africa . . .	E. Gedge.
26 $\frac{1}{2}$	8 $\frac{1}{2}$	Pungwe River . . .	Earl of Dunmore.
-26 $\frac{1}{2}$	8 $\frac{1}{2}$	Zambesia . . .	James J. Harrison.
25 $\frac{1}{2}$	8	Nyasaland . . .	Alex. R. Alston.
19 $\frac{7}{8}$	...	Do. . . .	Sir John Kirk, K.C.B.
-11 $\frac{1}{2}$ protruding from jaw	8 $\frac{1}{2}$	Shiré River . . .	Dr. Percy Rendall.

¹ Malformed.

² Straight tusk 19 ins. long.



Lower Tusk of Wild Boar.

WILD BOAR (*Sus scrofa* and *S. cristatus*).

Most of the European and Asiatic species of wild swine, forming the typical group of the genus *Sus*, are so like each other, that it is often a matter of difficulty to discriminate between them, and naturalists are not yet in accord as to the number of species which should be recognised. The European wild boar is a large coarsely-haired species, with an undercoat of woolly fur, no warts on the face, and standing about 33 inches at the shoulder. It lacks the crest or mane of long black bristles running from the nape down the back in its Indian cousin; and the last tooth in the lower jaw is of a rather less complex structure than in the latter. The wild boar of India (*S. cristatus*) is dear to the heart of the Indian sportsman, though he does contemptuously call its chase "pig-sticking."

"Pig-sticking" is considered quite as dangerous, if not more so than tiger-shooting. It is not a game of long bowls, but a close personal attack on a very fierce and pugnacious animal, endowed with strength, swiftness, and much tenacity of life. It takes a good horse and a good man to try conclusions satisfactorily with an old gray boar over nasty country, and the weapon used is only a spear. There are parts of the hilly country in India where it is impossible to ride, and

here the rifle may take the place of the spear; but then there is not much glory in shooting a pig. A solitary boar is frequently a morose and dangerous animal.

A Spanish boar killed by H.R.H. le Duc d'Orléans weighed 302 lbs.

Distribution.—Europe, Asia Minor, and North-East Africa.

Length outside curve of tusk.		Length of tusk out of gum.	Locality.	Owner.
Right.	Left.			
-11½	...	...	Caucasus	Col. Veernhof.
-11½	...	...	Do.	Capt. Robert Finnie.
9½	...	...	Asia Minor	Admiral Sir Michael Culme Seymour, Bart.
29½	...	...	Caucasus	Prince Demidoff.
9½	...	...	Do.	Do.
-9	...	...	Do.	Capt. Robert Finnie.
9	...	...	Albania	Sir Reginald Cathcart, Bart.
-8½	...	...	Algeria	Sir Edmund G. Loder, Bart.
1-8½	8½	3	Near Bona, Algeria . .	Viscount Edmond de Poncins.
-8½	8½	1½	Do.	Do.
-8	...	...	Albania	Capt. Robert Finnie.
8	2½	...	Russia	Count J. Potocki.

¹ Weight 275 lbs. clean.

² Weight 372 lbs.

Length outside curve of tusk.	Locality.		Owner.
-14½ (malformed)	Purneah, Lower Bengal	. . . .	H. R. P. Carter, recorded in <i>Field</i> , 19th January 1895. (See illustration, p. 422.)
-14½	Hills above Jamu	. . . .	Col. Sir Neville Chamberlain.
-12¾	Java	. . . .	H. Van Son.
-10½	North Kanara	. . . .	Bombay Natural History Society's Museum.
-10½	?	. . . .	Meerut Tent Club.
-10	India	. . . .	The late Sir Samuel Baker.
-9½	?	. . . .	Meerut Tent Club.
9½	?	. . . .	Dr. Travers.
9½	Burma	. . . .	Langford Whitehouse.
9½	North Kanara	. . . .	Lieut.-Col. L. L. Fenton.
9½	Central Provinces	. . . .	Major J. S. Ashby.

WILD BOAR (*Sus acrofa* and *S. cristatus*)—*continued*.

Length outside curve of tusks.	Locality.	Owner.
9½	Central Provinces	The late J. Moray-Brown.
8½	Do.	Col. F. D. Lugard, C.B., D.S.O.
8½	Jumna Valley	Capt. F. C. Quicke.
8½	Bengal	J. M'Kie.
8.30	Assam	Viscount Edmond de Poncins.
8½	Bikanir	Maharaja of Bikanir.
7.85	Assam	Viscount Edmond de Poncins.
8	"	Capt. P. A. Bainbridge.
7½	Mhou	H. Dibble.
7½	"	Maharaja of Bikanir.

Head of Wild Boar.

CAPE BUSH-PIG (*Sus* [*Potamochoerus*] *chaeropotamus*).

Bosch-vark of the Boers. *Ingulubi* of the Swazis and Zulus.

The bush-pigs, or river-hogs, of Africa and Madagascar form a peculiar group of swine characterised by having only 42, in place of 44, teeth, small tusks, and a large ridge-like prominence on each side of the face, due to the presence of a ridge of bone on the sheath of the tusk. The ears may be surmounted with tufts of long hair. The various species are best distinguished by the character of their skulls, colour forming a very uncertain guide. The Cape bush-pig, or *bosch-vark*, is very generally gray, but the late Sir Andrew Smith stated that "scarcely any two specimens of this species exhibit the same colours; some are a brownish black variegated with white, and others are almost entirely of a light reddish brown or rufous tint, without any white markings; indeed, such are the varieties that it is scarcely possible to say what are the prevailing colours." In British Central Africa, where they have been wrongly identified with the West African species, they are invariably reddish. Height at shoulder about 31 inches; weight, 35 lbs. Lower tusks average 6 to 7 inches long, and a good specimen shot by F. Vaughan Kirby has tusks protruding out of jaw $4\frac{3}{8}$ inches.

Distribution.—South and South-East Africa.

WEST AFRICAN BUSH-PIG or RED RIVER-HOG

(*Sus* [*Potamochoerus*] *porcus*).

In this species the colour is always some shade of rufous, either shining brownish red with a tinge of yellow, or dark reddish yellow with black on the forehead, ears, and limbs, the mane of the back, part of the margins of the ears, tips of the long tufts of hairs with which they are surmounted, and streaks above and below the eyes white.

Distribution.—West Africa, from Angola to Senegambia, and eastwards to Monbuttu.

Height at shoulder.	Weight.	Locality.	Owner.
—23½	35 lbs.	Shiré River, British Central Africa	Dr. Percy Rendall.

BABIRUSA (*Babirusa alfurus*).

The pig-deer (to translate its Malay name) is not the least notable of several remarkable animals restricted to Celebes; the peculiar form and position of the upper tusks of the boars rendering them almost comparable to horns. Unlike other pigs, in which they curve upwards from the sides of the lips, the tusks grow from the centre of the muzzle, piercing through the skin, and as they are not worn by the lower pair, attain extraordinary dimensions. Both pairs are quite devoid of enamel; the lower ones growing from the sides of the jaw in the ordinary manner. The other teeth are somewhat less numerous than in ordinary pigs. In other parts of its organisation the babirusa is, however, very like the latter, although its nearly naked skin is remarkable for its coarse and rugged nature, being almost comparable to the bark of a tree. The height at the middle of the back, the highest point of the animal, is about 42 inches. Unlike the rest of its tribe, the female babirusa produces only a pair of young at a birth, which are of the same uniformly slaty hue as their parent. Babirusa are confined to the island of Celebes, where they afford good sport to the natives, who drive them into nets and then spear them.

Dr. F. H. H. Guillemard recorded in the *Cruise of the "Marchesa"*:

Weight, male, 128 lbs.; female, 85 lbs.

Height at shoulder, $27\frac{1}{2}$ in.; female, $25\frac{1}{2}$ in.

Length.		Locality.	Owner.
Upper tusks.	Lower tusks.		
-17	...	Celebes	H. Van Son.
-14 $\frac{1}{2}$	...	Do. . . .	Dr. F. H. H. Guillemard.
-9 $\frac{1}{8}$	7 $\frac{3}{8}$	Do. . . .	Dr. Percy Rendall.



Tusks of Male Wart-Hog, F. H. Barber's specimen.

WART-HOG (*Phacochoerus aethiopicus*).

Bango or *Nguruwe* of the Swahilis. *Ngolobwi* in the Lake Ngami
Ikulubi of the Basutos. country.
Indaigazana of the Swazis and *Ngolobwi* in the Chilala and
Zulus. Chibisa countries.
Karkary of the Somalis. *Vlak-vark* of the Boers.
Ngolobwi in the Barotse country.

For downright ugliness the African wart-hog is hard to beat, and as it is well armed and possesses a bad temper, it is in all respects an undesirable acquaintance. The name is derived from the presence of three pairs of wart-like protuberances on the sides of the face between the eyes and the tusks; the head itself being characterised by the disproportionate length and flatness of the face. Unlike the true pigs, the stout upper tusks are longer than the lower pair; the inferior surfaces of their basal halves being worn to smooth facets by the points of the latter. Another peculiarity of the upper tusks is that they have no enamel, except at the extreme tips, which are soon worn off by use. But a further peculiarity is presented by the last molar teeth of each jaw, which, together with the tusks, are often the only teeth remaining in very old animals. They are both long and tall,

consisting of a number of closely-packed cylindrical columns of enamel, which, when worn, present a characteristic pattern. Except along the neck and back, where it carries a mane of bristly hair, the skin is nearly naked; and the young differ from those of ordinary pigs in being neither striped nor spotted. Height at shoulder, 30 inches.

Distribution.—The wart-hog is typically an inhabitant of South and South-East Africa. Animals of the same genus extend, however, right through East and Central Africa to Abyssinia; those from the latter country having been described as a distinct species, under the name of *P. africanus*. Not improbably, however, the northern animal is only a local race of the southern form. Wart-hogs, possibly from their habit of going to ground when pursued, are but seldom hunted with the spear; "pig-sticking" being, in fact, a sport practically unknown in Africa. The lower tushes seldom exceed 6 inches on the front curve.

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
-27 26 }	...	Annesley Bay.	Capt. Ralph Berners, R.N.
20	17 $\frac{3}{4}$	South Africa . . .	F. H. Barber.
-16 $\frac{1}{4}$	13 $\frac{1}{2}$	?	J. Whitaker.
-15 $\frac{1}{2}$ } 15 }	13 $\frac{1}{2}$	Matanari Bush . . .	F. Vaughan Kirby.
-15	...	South-East Africa . .	W. Russell Bowker.
14 $\frac{3}{4}$	...	British Central Africa .	James Yule.
...	13 $\frac{3}{4}$	Zambesia . . .	R. J. Cuninghame.
13 $\frac{1}{10}$	...	Somaliland . . .	B. R. M. Glossop.
-13	...	Timbalti River, S.E. Africa	W. Russell Bowker.
...	13	South-East Africa . .	F. C. Selous.
...	11 $\frac{3}{4}$	Somaliland . . .	Viscount Edmond de Poncins.
-12	...	South-East Africa . .	James Meldrum.
-11 $\frac{1}{2}$	...	Do. . .	Julius Jeppe.
-11 $\frac{1}{2}$	...	Do. . .	James J. Harrison.
-11 $\frac{1}{4}$	...	Somaliland . . .	J. D. Inverarity.
...	10 $\frac{3}{4}$	Mashonaland . . .	S. Chillingworth.
-11	...	East Africa . . .	Count Scheibler.

WART-HOG (*Phacochoerus aethiopicus*)—*continued.*

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
11	...	British Central Africa .	R. Skeffington Smyth.
	10 $\frac{3}{4}$	Sabi Flats, Transvaal .	Dr. Percy Rendall.
	10 $\frac{1}{2}$	Near Ruo River, South- east Africa	C. C. Bowring.
10 $\frac{1}{2}$	.	Somaliland . . .	W. R. Bindloss.
10 $\frac{1}{2}$	.	South-East Africa . .	F. Vaughan Kirby.
	9 $\frac{3}{4}$	.	W. W. Ashley.
	9	Pungwe .	Count E. Hoyos.
	9	Somaliland . . .	Prince Boris Czertwertynski.
	9	Do. . . .	Capt. F. C. Quicke.
Lower Tusks.			
9 $\frac{1}{2}$		Somaliland . . .	J. D. Inverarity.
9 $\frac{1}{2}$	.	Do. . . .	Viscount Edmond de Poncins.

Head of Male Wart-Hog.

Indian Rhinoceros (*Rhinoceros* sp.)
from Kuch Behar

GREAT INDIAN RHINOCEROS (*Rhinoceros unicornis*).

In addition to being the giant among its Asiatic kindred and possessing but a single horn, this huge rhino is specially characterised by the form of the folds in its hide, and the large tubercles on the fore- and hind-quarters, which look as though the skin had been fastened to the body by means of rivets. A fold before and behind the shoulder marks off one large triangular shield on each side, while another fold before each thigh separates a large rump-shield; the saddle-shaped body-shield being defined by the fold behind the shoulder and the one in front of the thigh, both of which extend across the back. Very characteristic, too, are the great folds which form heavy rings of skin round the neck. Although the tubercles are largest on the fore- and hind-quarters, they also occur on other parts of the body. Height at shoulder from 5 feet 8 inches to at least 6 feet; girth, 105 inches; length, 12 feet 10 inches, of body 11 feet.

MAHARAJA OF KUCH BEHAR'S SPECIMENS

Height at shoulder . . .	6 ft. 4 $\frac{1}{4}$ ins.	6 ft. 1 in.	6 ft. $\frac{1}{2}$ in.
Total length . . .	14 ft. 1 in.	13 ft. 2 ins.	13 ft. 10 ins.
Body . . .	11 ft. 11 ins.	11 ft. 2 ins.	11 ft. 8 ins.
Girth behind shoulder . .	119 ins.	112 ins.	
Biggest girth . . .	144 ins.	142 ins.	
Round neck nearest body	90 ins.	84 ins.	
" " head	74 ins.	75 ins.	
Horn . . .	16 $\frac{1}{2}$ ins.	13 $\frac{7}{8}$ ins.	

At one time this animal was found over the greater part of the Indian peninsula, as attested by fossil remains, but now it is restricted to Assam; its place farther east in the Sanderbans, Chittagong, and Burma being taken by the smaller *R. sondaicus*.

Distribution.—Chiefly the Assam plain at the present day.

Length on front curve.	Circumference.	Weight.	Locality.	Owner.
-24	...	...	?	The late Dr. T. C. Jerdon.
19 $\frac{1}{2}$	22 $\frac{3}{8}$	...	India . . .	British Museum.
-19	18	...	Singpo, Burma . .	Sir C. A. Elliot, Bart.
16 $\frac{3}{4}$	...	...	Belsire, Assam . .	W. C. Sherwill.
♀ 16 $\frac{1}{2}$	...	...	Kuch Behar . . .	Maharaja of Kuch Behar.
♀ 16	...	3 $\frac{1}{2}$ lbs.	Nowgong, Assam .	L. Fabre Tonnerre.
14 $\frac{1}{2}$	21	...	Assam . . .	Dr. W. P. Y. Bainbrigge.
♀ 14	22 $\frac{7}{8}$	4 $\frac{1}{2}$ lbs.	Nowgong, Assam .	L. Fabre Tonnerre.
-13 $\frac{3}{8}$	...	...	Kuch Behar . . .	Maharaja of Kuch Behar.
¹ 13	...	...	Do. . . .	Do.
13	20 $\frac{1}{2}$	...	Assam . . .	G. A. Dolby.
12 $\frac{3}{4}$	23	...	Do. . . .	H. B. Firman.
12 $\frac{1}{2}$	21 $\frac{5}{8}$	...	Do. . . .	H. C. Holland.
-12 $\frac{1}{2}$	15 $\frac{1}{2}$	...	Kuch Behar . . .	James J. Harrison.
12 $\frac{1}{2}$	21	...	?	J. W. Grieve.
-12	...	...	Bhutan Duars . .	Major-General Alexander A. A. Kinloch.
11	20	...	Kuch Behar . . .	Capt. Hon. W. Lambton.
-10 $\frac{3}{4}$	21 $\frac{3}{4}$	...	Foot of Garro Hills .	A. O. Hume, C.B.
10 $\frac{1}{2}$	17	...	?	Earl of Dunmore.
10	...	...	Kuch Behar . . .	Duke of Portland.
♀ -8 $\frac{3}{4}$	8	...	Do. . . .	Countess Scheibler.
8 $\frac{1}{2}$	15	...	Assam . . .	Sir Peter Walker, Bart.
8 $\frac{1}{2}$	14 $\frac{7}{8}$	...	Do. . . .	Hugh G. Barclay.
8	17	...	Do. . . .	Major E. T. Paul.
6 $\frac{1}{2}$	15	...	Tezpore, Assam . .	A. Y. Thomson.
5 $\frac{1}{2}$	14 $\frac{1}{2}$	...	Kuch Behar . . .	Major Henry Streatfeild.

¹ Height at shoulder, 6 ft. 6 ins.

JAVAN or LESSER ONE-HORNED RHINOCEROS (*Rhinoceros sondaicus*).

A less gigantic and smaller-headed species than the last, with the skin divided up into a kind of mosaic pattern, and the fold in front of the shoulder continued right across the body like the two hinder folds. The neck also lacks the large ring-like masses of folded skin. Horn never very large, and generally almost or completely wanting in the female. A female has been measured which stood $5\frac{1}{2}$ feet at the shoulder, and it is probable that the male stands little less than the great Indian species, although it is of lighter build.

Distribution.—The Sanderbans and other parts of Eastern Bengal, to the Terai, Sikim, Assam, and thence through Burma and the Malay Peninsula to Sumatra, Java, and Borneo.

Length on front curve.	Circumference.	Locality.	Owner.
10 $\frac{3}{8}$	19 $\frac{3}{8}$	Java	British Museum.
10 $\frac{3}{8}$	19 $\frac{1}{2}$	Do.	H. Van Son.
8 $\frac{1}{2}$	20	Do.	A. S. Campbell.

SUMATRAN RHINOCEROS (*Rhinoceros sumatrensis*).

The smallest of the Asiatic rhinos, and the only one with two horns ; differing, however, from the African members of the genus by the folds in the skin and the presence of teeth in the front of the jaws. Only the fold behind the shoulders is continued across the back, and the brown or black skin is rough, granular, and more or less hairy. Height at shoulder from about 4 feet to $4\frac{1}{2}$ feet ; weight about 2000 lbs.

Distribution.—From Assam (where the species is very rare) to Siam, the Malay Peninsula, Sumatra, and Borneo. Specimens from Chittagong are remarkable for the excessive development of the hair, which is long and very thick ; they may indicate that the Assamese form is a distinct local race (*R. sumatrensis lasiotis*).

Length on front curve.	Circumference.	Owner.
32 $\frac{1}{8}$	17 $\frac{3}{8}$	British Museum.
27 $\frac{1}{8}$	17 $\frac{7}{8}$	Do.

Common African Rhinoceros Skulls and Horns, from A. H. Neumann's specimens.
The biggest horn of the three measures 40 inches on front curve.

COMMON AFRICAN RHINOCEROS (*Rhinoceros bicornis*).

<i>Aurarisse</i> of the Abyssinians.	<i>Sipejana</i> of the Swazis and Matonga.
<i>Chipamberi</i> of the Lower Zambesi natives.	<i>Upelepe</i> of the Basutos.
<i>Gurhu</i> of the Danakil tribes.	<i>Upejana</i> of the Matabeles and Zulus.
<i>Favu</i> of the Swahilis.	<i>Weel</i> of the Somalis.
	<i>Zwart Rhinoster</i> of the Boers.

The African rhinoceroses are two-horned animals, readily distinguished from their Asiatic relatives by the absence of the folds of skin on the body which form such a characteristic feature of the latter; as they also are by the lack of front teeth in both the upper and lower jaws. The hide, too, is almost completely naked, although there are some bristly hairs on the margins of the ears and the tip of the tail. Average height at shoulder, 5 feet.

Perhaps the most distinctive external feature of the black rhinoceros, as the present species is commonly called, is to be found in the prehensile tip to the upper lip, which is rounded and not very wide in front. Other points of distinction are, however, shown by the form of the horns and ears and the position of the eyes; while in bodily size this animal is also considerably inferior to the next. If anatomical

characters be taken into account, the black rhinoceros is also well characterised by the comparative shortness of its skull, and the form and structure of the molar teeth, which are adapted for a diet of twigs and leaves.

Captain Edgar G. Harrison, writing in the *Field*, December 25, 1897, records the measurements of a five-horned Rhinoceros shot by him in East Africa as follows:—

Head of Common African Rhinoceros.

First Horn.—Counting from snout, measurement $14\frac{3}{4}$ in.; is a normal front horn curving backwards.

Second Horn.— $15\frac{1}{4}$ in., curving forwards instead of backwards or being straight, as is usual, and leaning considerably over to the off-side.

Third Horn.— $11\frac{1}{4}$ in. long and $5\frac{1}{2}$ in. wide half-way between base and apex; is flat and perpendicular, and, though a distinct horn, grows out of the off-side of the base of No. 2.

Fourth Horn.—Is a stumpy, abortive horn, 9 in. long, growing partly from the base of No. 3, but quite separate and inclining slightly backwards.

Fifth Horn.—A distinct horn, $9\frac{3}{4}$ in. long, with its own base separated about 3 in. from No. 4.

Distribution.—From Abyssinia and Somaliland through East and Central Africa, in suitable localities, to the Cape. Now rare to the south of the Zambesi, and probably more abundant in the districts between the interior of Somaliland and Lake Rudolph than anywhere else. Although more alert and active than Burchell's rhinoceros, and thus a more dangerous animal, this species is by no means difficult to kill with modern weapons; and in the old days hunters frequently shot half-a-dozen in a single evening as they came to drink at a pool. In spite of its wide distribution, it has not been found possible to split up the species into local races; although this may perhaps be due to the want of sufficient specimens for comparison.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
44	...	...	...	?	The late F. Holmwood.
43	...	21½	...	?	A. Beit.
41½	10	20½	16½	Zululand . . .	Lieut.-Col. Hon. W. Coke.
-41½	...	22½	...	Orange River . . .	Major-Gen. Sir William Crossman, K.C.M.G.
-41	...	...	...	?	Carl Hagenbeck.
41	...	...	...	East Africa . . .	The late F. Holmwood.
-40	...	22	...	Do. . . .	Berlin Museum.
40	14½	18½	20½	Mt. Kenia, East Central Africa	A. H. Neumann.
-39½	...	21½	...	South Africa . . .	J. Lamont.
38½	...	21	...	?	Hon. Walter Rothschild.
38½	...	19	...	Masailand	Sir John Kirk, K.C.B.
-38	11	24	21½	South Africa . . .	Earl of Dartmouth.
-36	...	...	...	East Africa . . .	Sir Bartle Frere, Bart.
-35½	...	18	...	?	H. Murray.
♀ 33½	...	17½	...	Matabeleland . . .	W. Van Ness.
-32½	21	19	15½	Portuguese Northern Zambesia	F. Vaughan Kirby.
-32	11½	19½	19½	Athi Plains, East Africa	Count Scheibler.
31	...	18	...	East Africa . . .	R. P. Carroll.
31	19½	16	16½	Do. . . .	H. C. V. Hunter.
30½	...	21½	...	Zambesi Valley . . .	Sir John Kirk, K.C.B.

COMMON AFRICAN RHINOCEROS (*Rhinoceros bicornis*)—*continued*.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
-29½	14½	...	...	Somaliland . .	A. H. Straker.
29	...	19	...	East Africa . .	Prince Boris Czetwertynski.
28½	...	18	...	South Africa . .	C. D. Rudd.
28½	8½	18½	...	Do. . .	F. C. Selous.
-27½	12	...	...	Lake Njire . .	T. E. Buckley.
27½	10	21	17	Masailand . .	Capt. R. A. J. Montgomerie, C.B., R.N.
27	...	20½	...	East Africa . .	E. Gedge.
27	16½	17½	17½	Do. . .	Sir Robert Harvey, Bart.
27	12	...	...	Do. . .	Sir John Willoughby, Bart.
26½	13½	22	...	?	Sir Edmund G. Loder, Bart.
26½	10½	19½	15	East Africa . .	Henry Charrington.
♀ 25½	17	16	15	East shore of Lake Rudolph	A. H. Neumann.
25½	9½	17½	...	East Africa . .	F. J. Jackson, C.B.
♀ 24½	12	16	17½	Masailand . .	Capt. R. A. J. Montgomerie, C.B., R.N.
♀ 24	...	10½	...	Kilimanjaro . .	T. E. Buckley.
22½	...	19½	...	East Africa . .	W. Astor Chanler.
22½	14½	17	16½	Somaliland . .	Julius Jeppe.
22½	10	22½	19	Do. . .	Sir H. D. Tichborne, Bart.
-22	12.3	20.8	19.2	East Africa . .	Prince Henry of Liechtenstein.
21½	11½	19	19	Somaliland . .	J. Kenneth Foster.
21½	17	14	16	Abyssinia . .	British Museum.
-20½	9½	21½	19½	Somaliland . .	Count E. Hoyos.
20	11½	21½	18	Do. . .	J. Byng Paget.
20	6½	20½	19½	Do. . .	Major H. G. C. Swayne.
-20	8½	23½	21½	Do. . .	Count E. Hoyos.
-19½	8	...	...	Do. . .	Capt. M. M'Neill.
-19½	18½	8½	17½	Sabi Flats . .	Dr. Percy Rendall.
-19½	6½	15½	14	E. C. Africa . .	James J. Harrison.
-19	22	18½	20	B. E. Africa . .	Count Scheibler.

COMMON AFRICAN RHINOCEROS (*Rhinoceros bicornis*)—*continued*.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
-19	8	14	...	Somaliland	Count Grudzinski.
18 $\frac{3}{4}$	10 $\frac{1}{2}$	18 $\frac{1}{2}$	16 $\frac{1}{2}$	Do.	A. S. Trevor.
-18 $\frac{1}{4}$	7	22	20 $\frac{1}{2}$	Do.	P. H. G. Powell-Cotton.
-18 $\frac{1}{2}$	...	21 $\frac{1}{2}$	...	Do.	Count T. Zamoyski.
18	12 $\frac{1}{2}$	20	22	East Africa	Lord Delamere.
18	12	20	18	South Africa	Durban Museum.
18	7 $\frac{1}{2}$	21	17	Somaliland	R. Wahrmann.
17 $\frac{1}{2}$	7 $\frac{3}{4}$	19 $\frac{1}{2}$	19 $\frac{3}{4}$	Abyssinia	British Museum.
17 $\frac{1}{2}$	9 $\frac{3}{4}$	20	17 $\frac{1}{2}$	Somaliland	Prince Nicolas Ghika.
-17 $\frac{1}{2}$	12 $\frac{3}{4}$	17	18 $\frac{1}{2}$	Do.	W. W. Ashley.
17	6 $\frac{1}{2}$	21	17	Do.	Prince Demeter Ghika.
17	13	16 $\frac{1}{2}$	18 $\frac{1}{2}$	Do.	J. Benett-Stanford.
16 $\frac{3}{4}$	...	15 $\frac{3}{4}$	...	Sudan	Col. Ralph Vivian.
-16 $\frac{1}{2}$	7 $\frac{1}{2}$	17 $\frac{1}{2}$	15 $\frac{1}{2}$	Somaliland	C. V. A. Peel.
16 $\frac{1}{2}$	8	20	18 $\frac{1}{2}$	Do.	Count J. de Bylands.
- ♀ 16	...	...	...	Do.	Capt. M. M'Neill.
16	9 $\frac{1}{2}$	14 $\frac{3}{4}$	16	Do.	Major V. M. Stockley.
-15 $\frac{3}{4}$	6	18	15	Do.	A. Leslie Renton.
-15 $\frac{3}{4}$	8	20	19	Do.	Count J. Potocki.
-15	11 $\frac{1}{2}$	15 $\frac{1}{2}$	16 $\frac{1}{2}$	Athi Plains, East Africa	Countess Scheibler.
14 $\frac{1}{2}$	6 $\frac{1}{2}$	16	...	Somaliland	P. B. Vander-Byl.
11 $\frac{1}{2}$	5 $\frac{1}{2}$	16 $\frac{1}{2}$	15 $\frac{3}{4}$	Do.	Col. Arthur Paget.
10	6 + 3	(3 horns)	...	East Africa	Sir John Willoughby, Bart.

Front Horns of Burchell's Rhinoceros.

From specimens in the collection of the late Roualeyn Gordon Cumming, in the possession of
Col. W. Gordon Cumming.

BURCHELL'S RHINOCEROS (*Rhinoceros simus*).

Next to the Indian elephant this is the largest mammal that has trodden the earth in modern times ; and its practical extermination cannot fail to be a matter of lasting regret. Its huge bulk, bluntly truncate muzzle, which has no prehensile tip, the great length of the skull, and the enormous front horn, with its expanded base, form the most striking external characteristics of this species. And on looking at the skull it will be found that the molar teeth are of quite a different type of structure from those of the preceding species ; being, in fact, adapted for chewing grass. In walking, the animal carried its head low, so that in examples in which the front horn bends forward, its tip became worn by being pushed along the ground. It is difficult to surmise the reason for the application of the name "white rhinoceros" to this species, unless, indeed, it be that Cape specimens were lighter coloured than any seen in the districts to the north.

Distribution.—South and South-East Africa, in suitable localities, as far north as the Zambesi. Exterminated early in the century to the south of the Orange River ; and now represented at the most by a few survivors in North-East Mashonaland, and possibly by others in the reedy swamps at the junction of the Black and White Umvolosy rivers. Between the Zambesi and Orange rivers the species was abundant less than half a century ago ; Andersson alone having killed sixty in the course of a few months. Till a few years ago this rhinoceros was unrepresented by adult skins or skeletons in any British Museum ; and it is to the credit of Messrs. Coryndon, Eyre and Varndell that complete examples were secured before it became too late.

North of the Zambesi there exists a rhinoceros (*R. holmwoodi*) at present known only by single horns, which appears to be a near ally of this species, although it was at first regarded as a variety of the common rhinoceros.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
62½	...	22½	...	South Africa . .	Col. W. Gordon Cumming.
56½	...	23½ about	...	Do. . .	British Museum.
52½	...	21½	...	Do. . .	Col. W. Gordon Cumming.
44	...	20	...	?	British Museum.
43½	...	23½	...	South Africa . .	A. Beit.

BURCHELL'S RHINOCEROS (*Rhinoceros simus*)—continued.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
42 $\frac{3}{4}$	...	...	25 $\frac{5}{8}$	Limpopo, S. Africa.	The late W. C. Oswald.
-41	...	...	...	South Africa . . .	J. W. Fitzherbert.
40 $\frac{3}{4}$	...	29 $\frac{3}{4}$	...	Do. . . .	Sir Edmund G. Loder, Bart.
-40 $\frac{1}{2}$	...	22 $\frac{1}{2}$	...	Do. . . .	Do.
40	...	15 $\frac{3}{4}$	...	Do. . . .	British Museum.
-39	...	...	...	?	A. Ohlsson.
♀ 38 $\frac{5}{8}$	...	24 $\frac{1}{2}$	...	?	The late W. C. Oswald.
38 $\frac{1}{2}$	...	22 $\frac{1}{2}$	...	?	J. B. Taylor.
37 $\frac{3}{8}$	17 $\frac{7}{8}$	27 $\frac{1}{8}$	...	Mashonaland . .	F. C. Selous.
37 $\frac{1}{2}$	...	24	...	South Africa . .	British Museum.
-36 $\frac{3}{4}$	...	20 $\frac{1}{2}$	...	?	Berlin Museum.
36	...	28 $\frac{1}{2}$	...	Mashonaland . .	C. D. Rudd.
36	...	25 lbs.	...	?	Rev. V. R. Carter.
35 $\frac{1}{2}$ (mounted specimen)	7 $\frac{3}{8}$	26	21	Mount Domo, Ma- shonaland	Cecil Rhodes, Cape Town Museum.
-33 $\frac{1}{2}$	...	23	...	?	Julius Jeppe.
33	...	25 $\frac{1}{2}$	...	?	Duke of Westminster.
33	13 $\frac{1}{2}$	23 $\frac{1}{2}$	...	Mashonaland . .	F. C. Selous.
33	...	25 $\frac{1}{2}$	...	?	Duke of Westminster.
32 $\frac{3}{4}$	...	27 $\frac{1}{2}$	...	?	The late J. S. Jameson.
♀ 32 $\frac{3}{4}$	...	27	...	Lake Ngami . .	The late W. C. Oswald.
31 $\frac{1}{8}$	...	19 $\frac{1}{2}$	...	?	Mr. Justice Hopley.
31	...	24	...	Zululand . . .	Lieut.-Col. Hon. W. Coke.
-30 $\frac{3}{4}$	...	25 $\frac{1}{2}$	...	South Africa . .	Col. H. B. H. Blundell, C.B.
♀ 29 $\frac{3}{4}$	5 $\frac{1}{2}$	23	20 $\frac{1}{2}$	Zululand . . .	Julius Jeppe, Pretoria Museum.
27 $\frac{5}{8}$	12	22 $\frac{3}{4}$	18 $\frac{1}{2}$	Do. . . .	Julius Jeppe.
27	...	20 $\frac{1}{2}$	...	Do. . . .	Dr. W. P. Y. Bainbrigge.
27	11 $\frac{3}{4}$	30 $\frac{3}{8}$	25	Do. . . .	Sir Edmund G. Loder, Bart.
23 $\frac{1}{8}$	...	26	...	?	Mr. Justice Hopley.
22 $\frac{1}{2}$ (mounted specimen)	7 $\frac{1}{2}$	26 $\frac{1}{2}$	...	Mashonaland . .	Hon. Walter Rothschild.
...	13	...	19 $\frac{1}{2}$	?	Mr. Justice Hopley.
20 $\frac{3}{4}$ (mounted specimen)	7	28 $\frac{3}{4}$	...	Mashonaland . .	British Museum.
20	6	25 $\frac{1}{2}$	18 $\frac{1}{2}$	Zululand . . .	H.R.H. le Duc d'Orléans.



From a Photograph by Mr. Baile, Reading.

Skull and Horns of Burchell's Rhinoceros, Mashonaland, 1880.
Shot by F. C. Selous.

Elephant
Tuck Behar

INDIAN ELEPHANT (*Elephas indicus*).

In general a decidedly smaller animal, the Indian elephant differs from its African relative not only in external form, but also in the structure of its molar teeth, which are composed of a greater number of much thinner vertical plates. The females, as a rule, have only very small tusks, not projecting beyond the jaw ; and in some cases those of the males are equally poorly developed. Five nails are usually present on the fore-feet, and four on the hinder ones. Externally, the most characteristic distinction is the comparatively small size of the ears ; next to which comes the presence of a finger-like process on the front edge only of the tip of the trunk ; the African species having one in front and a second behind. The skin is nearly smooth ; and the

bristles on the tail are confined to the front and back edges for some distance above the tip. Other noticeable points are the comparative flatness of the forehead, and the regular convex form of the back. Although males do not generally exceed 9, and females 8 feet in height, specimens have been killed measuring 9 feet 10 inches, 10 feet 1 inch, and 10 feet 7½ inches, while one is stated to have reached 11 feet, and there is evidence of still larger individuals, perhaps of 12 feet.

Distribution.—The forest districts of India, Ceylon, Assam, Burma, Siam, Cochin China, Sumatra, and Borneo. The Sumatran elephant has been regarded as a distinct species, and it may possibly form a peculiar local race.

Height at Shoulder. ft. in.	Locality.	Owner.
-11 0	Mysore	Viscount Powerscourt.
-10 4	Gurhwal, N.W.P.	Col. J. E. Campbell.
-10 1	Ceylon	James J. Harrison.
-10 1	?	Major-General Alexander A. A. Kinloch.
-9 7	Mysore	The late Col. G. P. Sanderson.
-9 4	Ceylon	Count Scheibler.

Tusks.

Length out- side curve. ft. ins.	Greatest cir- cumference. ins.	Weight. lbs.	Locality.	Owner.
-8 9 R	17½	81	Assam	Presented to the late Lord Lytton by Sir Steuart Bayley, K.C.S.I. Measured by A. O. Hume, C.B.
-8 2 L	...	80.2	Do.	Do.
...	...	100	Do.	The late Charles Redde, <i>P.Z.S.</i> 1886, p. 176.
8 0	16½	90	South India	Sir Victor Brooke's Collection.
17 3½	17½	102	Burma	} Marquis of Waterford.
7 3½	17½	97½	Do.	
6 10	17½	65½	India	J. D. Goldingham, Bethnal Green Museum.
-6 8	...	77½	Madura District, South India	Col. G. M. Payne.
6 7½	14½	52½	Mysore	Viscount Powerscourt.
-6 7	12½	46½	Yala, S. Provinces, Ceylon	Capt. R. J. Marker.
-6 3½	...	73½	Madura District	Col. G. M. Payne.

¹ The tusks of the sacred white elephant which came out of King Thebaw's Palace, Burma.

RECORDS OF BIG GAME

INDIAN ELEPHANT (*Elephas indicus*). Tusks—continued.

Length out- side curve.	Greatest cir- cumference.	Weight.	Locality.	Owner.
ft. ins.	ins.	lbs.		
6 0	...	50	Madras . . .	J. Fortune.
-5 10	...	...	Borneo . . .	C. M. D. Stewart.
-5 3	15	42	Ceylon . . .	W. S. Murray.
-5 1½	15	35	Travancore . . .	Hon. E. Stonor.
-5 0	...	...	Burma . . .	T. Mumford.
4 10	15½	32½	Travancore . . .	Hon. E. Stonor.
-4 7	13	...	Do. . . .	J. D. Rees.
4 6	15	...	Do. . . .	Lord Wenlock, G.C.I.E.
4 4½	15	...	Do. . . .	Do
1 3 11½	12½	29½	Yala, S. Provinces, Ceylon	Capt. R. J. Marker.

MEASUREMENTS PROTRUDING FROM SKULL.

3 11	...	...	India . . .	British Museum.
3 6½	...	...	Do. . . .	Do.
3 3	...	...	Do. . . .	Do.
2 5½	15	...	Do. . . .	Do.
2 0½	...	...	Mysore . . .	Viscount Powerscourt.
1 6	4½	...	Sumatra . . .	British Museum.

¹ Broken end, pair to 6 ft. 7 ins.

Feet.

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
-67½	...	Measurement taken from living elephant under charge of Lieut.-Col. G. W. Hanson.	
62½	...	South Arcot District .	J. Fortune.
61	20	Travancore . . .	D. M. Lumsden.
60	18	Mysore . . .	Viscount Powerscourt.
-60	...	Gurhwal . . .	B. B. Osmaston.
-60½	...	India . . .	Major-Gen. Alexander A. A. Kinloch.
-59½	...	Gurhwal . . .	B. B. Osmaston.
58½	18	Travancore . . .	H. L. Cottingham.

INDIAN ELEPHANT (*Elephas indicus*). Feet—*continued*.

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
58	18	Travancore . .	Hon. E. Stonor.
57 $\frac{3}{4}$	19	Assam . . .	H. C. Holland.
¹ 57 $\frac{1}{2}$	17	Ceylon . . .	R. Gordon Smith.
57 $\frac{1}{2}$	18 $\frac{1}{2}$	Assam . . .	D. D. F. Hosack.
-56	...	Ceylon . . .	E. J. Brooke.
56	17	Do. . . .	G. M. Norrie.
-56	18	Do. . . .	Sir Peter Walker, Bart.
-56	17 $\frac{1}{2}$	Do. . . .	T. H. Mann.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	Travancore . .	Lord Wenlock, G.C.I.E.
55	17 $\frac{3}{4}$	Ceylon . . .	Rowland Ward.
² 55	17	Gurhwal . . .	B. B. Osmaston.
55	17	N.W. Provinces .	Capt. G. O. Bigge.
54 $\frac{3}{4}$	18	Pyinmana Tai .	H. Partridge.
54 $\frac{1}{2}$	17 $\frac{1}{2}$	Ceylon . . .	H. Storey.
53 $\frac{3}{4}$	18 $\frac{1}{2}$	Do. . . .	W. H. Walker.
52 $\frac{1}{2}$	17	Do. . . .	H. E. Lindsay.
-50	16 $\frac{1}{2}$	Do. . . .	James J. Harrison.
49	15	Do. . . .	Capt. R. J. Marker.
48 $\frac{1}{2}$	16	Sumatra . . .	R. P. Carroll.
46 $\frac{1}{2}$	15	?	G. A. Dolby.
45 $\frac{1}{2}$	15 $\frac{1}{2}$	Mysore . . .	W. G. Deeds.

¹ Measurements 54 ins. x 17 ins. when dried.² Measurements 59 $\frac{1}{2}$ when shot.

Head of African Elephant.

AFRICAN ELEPHANT (*Elephas africanus*).

<i>Arba</i> of the Gallas.	<i>Tlo</i> in the Barotse country.
<i>Dakana</i> of the Abyssinians (Dan- akil).	<i>Thlo</i> in the Lake Ngami country.
<i>Marodi</i> of the Somalis.	<i>Zahon</i> of the Abyssinians.
	<i>Zemba</i> of the Swahilis.
<i>Njovu</i> in the Chilala and Chibisa countries.	

The African elephant, although still abundant in many regions of Central Africa, in the southern part of the Continent is rapidly approaching extinction. A very remarkable exception to this melancholy process of extermination is, however, to be found in the south and east of Cape Colony, where, since the year 1830, wild elephants have been systematically preserved by Government. Strong troops of these protected elephants still roam the dense and impenetrable jungles of the Addo Bush and the Knysna and Zitzikamma forests. A permit to shoot one of these elephants—costing £20—is to be obtained at Cape Town. Farther inland the ivory-hunters have for a generation past been so actively employed, that, despite the vast numbers of these

great mammals which forty or fifty years ago thronged the interior from the Orange River northwards, but a few troops are now left south of the Zambesi. In all Khama's country of Bamangwato, for instance, where Gordon Cumming, Oswell, and others shot most of their elephants, only one solitary troop remains !

		Owner.				
ft.	in.					
10	7	"Jumbo"	.	.	.	Barnum and Bailey.

Male shot by James J. Harrison in the Chiperoni Forest,
Mozambique Province.

	ft.	in.		ft.	in.
Trunk-tip to crown	9	9	Girth of forearm	4	6
Crown to tail-tip	17	3	" fore-foot	4	11
Vertical standing height	11	1	The tusks were not very large.		

Estimated height of a huge tuskless male shot by Mr. F. Vaughan Kirby in the Chiringoma Forest, 10 feet 8 or 9 inches, circumference of forefoot 60 inches.

Male shot in Portuguese East Africa by F. Vaughan Kirby.

Length from trunk-tip to crown	ft. in.	Greatest height above ground as it	ft. in.
" " crown to tail-tip	9 7	lay dead	5 4
Vertical shoulder height	16 9	Right tusk on the curve	5 10
Perpendicular diameter of left ear	10 6½	Left " "	5 11½
over the flap	5 9	Greatest circumference	19
Girth of left fore-foot	4 10	Weight, right 77 lbs., left 81½ lbs.	

Mr. A. H. Neumann, in his *Elephant Hunting in East Equatorial Africa*, records the following among other dimensions :—

Male.	Height at shoulder in straight line.	Length from root of tail to eye, in straight line.	Girth of forearm below elbow.	Circum- ference of fore-foot.	Long diameter of hind-foot.	Girth of thickest tusk just outside lip.
	ft. in. 10 8 or 9 (at least)	ft. in. 12 6	ft. in. 4 6	ft. in. 4 8½	ft. in. 1 9	ft. in. 1 6½
Shot at El Bogoi (foot of Lorogi Mountains), 30th Sept. 1894.	10 8 or 9 (at least)	12 6	4 6	4 8½	1 9	1 6½
Shot at Bumi (Lake Rudolph), 29th Dec. 1895.	10 5 (at least)	12 6	...	4 8½	...	1 6
Do. do.	10 9 (at least)	12 8 or 9	...	5 0	1 10	1 9½
Shot at Janjai (near Kenia), 13th May 1894.	10 6 (at least)	...	...	...	...	...

The three first were old bulls of the type found, as a rule, in separate herds. The last was a "herd bull" or breeding male.

AFRICAN ELEPHANT (*Elephas africanus*)—continued.

Height at shoulder in straight line.		Total length (trunk to end of tail).		Girth of belly.		Girth of fore-foot.		Locality.	Owner.
ft.	in.	ft.	in.	ft.	in.	ft.	in.		
-10	6	...				...		S.E. Africa	F. C. Selous.
-10	3½	..		...		...		E. C. Africa	James J. Harrison.
-10	3	21	0	18	0	5	1	Nyasaland	Sir John Kirk, K.C.B.
-10	0	23	5	16	6	...		South Africa	H.R.H. the Duke of Saxe-Coburg and Gotha.
-9	7½	.		...		4	6½ (dried)	Somaliland	Viscount Edmond de Poncins.
-9	6½	...		...		...		Do.	Capt. M. M'Neill.
-9	3	24	6	...		.		?	Count E. Hoyos.
-9	2	...		...		...		Ruwenzori, E. C. Africa	Capt. C. Ashburnham.
-8	0	.		...		3	8½	?	Count Scheibler.

Tusks.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	in.				
9	5	22½	184	Africa	Sir Edmund G. Loder, Bart.
...		...	172	Do.	The late Sir Samuel Baker.

Specimens of A. H. Neumann's large Elephant Tusks.

9	4	20½	160	E. Africa	Sir John Kirk, K.C.B.
9	4	18	110	Do.	Duke of Westminster.
(tip broken)					
-9	4	..	151	Elgayu, E. Africa	F. J. Jackson, C.B.
-9	3	...	129	?	Do.
9	0	18½	116	N. of Lake Rudolph, E. C. Africa	A. H. Neumann.
9	0	21	150	Africa	Sir Edmund G. Loder, Bart.
9	0	18½	116	N. of Lake Rudolph	A. H. Neumann.

AFRICAN ELEPHANT (*Elephas africanus*). Tusks—*continued*.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	in.	in.	lbs.		
—8	11	18 $\frac{3}{4}$	.	Galla Country .	Measured by Viscount Edmond de Poncins.
8	11	17 $\frac{1}{2}$	90	?	H.M. the Queen, Bethnal Green Museum.
8	10	18	105	East Africa .	Lord Delamere.
—8	8	18 $\frac{1}{2}$	..	?	Sir H. B. Meux, Bart.

From a photograph by Mr. J. R. W. Pigott.

The Big Tusk (8 ft. 7 $\frac{1}{2}$ in., 165 lbs.) presented by the Officers serving in British East Africa to H.R.H. the Duke of York on the Occasion of his Marriage.

8	7 $\frac{1}{2}$	22 $\frac{3}{4}$	165	East Africa .	H.R.H. the Duke of York.
8	6	18 $\frac{1}{2}$	100	Do. .	Lord Delamere.
8	3	18 $\frac{3}{4}$	81 $\frac{1}{2}$	Do. .	T. W. Greenfield.
8	2	18 $\frac{3}{4}$	80	Do. .	Do.
8	1	20 $\frac{1}{2}$	114	N. of Lake Rudolph, E. C. Africa	A. H. Neumann.

AFRICAN ELEPHANT (*Elephas africanus*). Tusks—*continued*.

Length (outside curve).		Greatest circumference.	Weight.	Locality.		Owner.
ft.	in.	in.	lbs.			
7	10	19 $\frac{1}{8}$	107	East Africa	.	A. H. Neumann.
7	8 $\frac{1}{2}$	23 $\frac{1}{2}$	160	Africa	.	Chalmers, Guthrie, and Co.
-7	8	...	108	Galla Country	.	Dr. Donaldson Smith.
7	6	...	100	Do.	.	Do.
7	6	17	...	?		Duke of Westminster.
7	6 $\frac{1}{2}$	21 $\frac{1}{2}$	...	South Africa	.	The late W. C. Osell.
7	3 $\frac{1}{2}$	19 $\frac{1}{2}$	102	East Africa	.	Col. F. D. Lugard, C.B., D.S.O.
7	0 $\frac{1}{2}$	17 $\frac{1}{2}$	60	Kilimanjaro, East Africa		F. J. Jackson, C.B.
7	0	18	...	South Africa	.	Cetywayo's peace-offering in 1879 to Lord Chelmsford.
6	9	17 $\frac{1}{2}$	...	Kilimanjaro	.	F. J. Jackson, C.B.
6	8	17	74	?		Julius Jeppe.
6	7	16 $\frac{1}{2}$	...	South-East Africa	.	F. C. Selous.
9 6	5 $\frac{1}{2}$	12 $\frac{1}{2}$	...	N. of Lake Rudolph, E. C. Africa		A. H. Neumann.
6	4 $\frac{1}{2}$	17 $\frac{1}{2}$	...	East Central Africa	.	H. S. H. Cavendish.
6	1	7 $\frac{1}{2}$	...	Masailand	.	Sir John Kirk, K.C.B.
(spiral tusk) -6	1	18	...	Somaliland	.	Sir H. B. Meux, Bart.
5	10	16 $\frac{1}{2}$	...	White Nile	.	The late Sir Samuel Baker, British Museum.
-5	9	18	70	Nyasaland	.	S. Pulley.
5	4	14 $\frac{1}{2}$	...	East Central Africa	.	G. E. Smith.
5	4	16 $\frac{1}{2}$	78	Ruwenzori, Africa	E. C.	Capt. C. Ashburnham.
4	11	15	26	Somaliland	.	A. H. Straker.
4	11	16	...	Ruwenzori, Africa	E. C.	Capt. C. Ashburnham.
4	9 $\frac{1}{2}$	14 $\frac{1}{2}$	33 $\frac{1}{2}$	Somaliland	.	E. W. S. Brooke.
4	8 $\frac{1}{2}$	13 $\frac{1}{2}$	...	Do.	.	Sir Edmund G. Loder, Bart.
4	5	12 $\frac{1}{2}$	...	Do.	.	Lord Delamere.
4	5	10 $\frac{1}{2}$	20	Do.	.	P. R. Denny.
4	5	10	...	East Africa	.	W. Astor Chanler.
4	4	13 $\frac{3}{4}$	26	Somaliland	.	Capt. J. M'Call Maxwell.
4	1	14 $\frac{1}{2}$	60	Do.	.	Digby Davies.

AFRICAN ELEPHANT (*Elephas africanus*). Tusks—*continued*.

Length (outside curve).		Greatest circumference.	Weight.	Locality.		Owner.
ft.	in.	in.	lbs.			
-4	1	13½	15¾	Somaliland	.	Capt. M. M'Neill.
4	8½	11	19¾	Do.	.	P. R. Denny.
-3	8½	14½	16½	Danakil	.	Viscount Edmond de Poncins.
-3	4½	14½	16½	Do.	.	Do.
-2	10½	7½	6½	Do.	.	Do.
-2	10	7½	...	Somaliland	.	Dr. Donaldson Smith.
-2	10	...	...	Do.	.	James J. Harrison.

MEASUREMENTS PROTRUDING FROM SKULL.

-4	8	...	...	Somaliland	.	Capt. M. S. Wellby.
-4	1	16½	...	?		Julius Jeppe.
-3	11	16	...	?		Do.
3	5½	15½	...	South Africa	.	The late J. S. Jameson.

Feet.

Circumference at base.	Width at bottom, back to front.	Locality.		Owner.
-60¾	...	Somaliland	.	Capt. M. S. Wellby.
58½	19	E. C. Africa	.	H. S. H. Cavendish.
56	19	Somaliland	.	The late Col. E. Carrington.
54	18½	Do.	.	Major J. S. Ashby.
54	...	Kilimanjaro	.	F. J. Jackson, C.B.
-54	17	Somaliland	.	Count E. Hoyos.
53½	18½	South-East Africa	.	The late J. S. Jameson.
53	17	Somaliland	.	Capt. J. M'Call Maxwell.
52½	19	Do.	.	Major J. S. Ashby.
52½	17	South Africa	.	Rowland Ward.
-51	...	Galla Country	.	Viscount Edmond de Poncins.
50	17	South Africa	.	F. C. Selous.
49½	17½	Do.	.	Do.

AFRICAN ELEPHANT (*Elephas africanus*). Feet—continued.

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
-49½	...	East Central Africa . . .	James J. Harrison.
49½	17	Rhodesia . . .	W. W. Ashley.
49½	17	Masailand . . .	Col. F. D. Lugard, C.B., D.S.O.
49½	16½	East Africa . . .	W. Astor Chanler.
48½	16½	East Africa . . .	H. C. V. Hunter.
-48½	16½	Somaliland . . .	Capt. M. M'Neill.
48	...	Uganda . . .	Col. F. D. Lugard, C.B., D.S.O.
48	16	B. E. Africa . . .	Col. Trevor Ternan.
44½	14½	Sudan . . .	Col. Ralph Vivian.
44½	15½	Somaliland . . .	Prince Demeter Ghika.

MAMMOTH or SIBERIAN ELEPHANT (*Elephas primigenius*).

Nearly allied to the Indian elephant, but the plates of the teeth still narrower and more numerous, the tusks spirally twisted, and the skin clothed in woolly fur with long bristles intermixed.

Remains of this species occur in the superficial deposits of Europe and Northern Asia. In the frozen soil of Siberia the skin, flesh, and hair are frequently preserved, and the ivory is often suitable to the purposes of the turner.

Length (out- side curve).	Greatest Circum- ference.	Weight.	Locality.	Owner.
11 ft.	20½ ins.	173 lbs.	Siberia . . .	Sir Edmund G. Loder, Bart.

LION (*Felis leo*).

<i>Ambassa</i> of the Abyssinians.	<i>Mkango</i> or <i>Nkalamo</i> in the Chilala
<i>Asced</i> of the Arabs.	and Chibisa countries.
<i>Imbubi</i> of the Swazis and Zulus.	<i>Simba</i> of the Swahilis.
<i>Lendja</i> of the Gallas.	<i>Tau</i> of the Basutos.
<i>Libbah</i> of the Somalis.	<i>Tauw</i> in the Barotse country.
<i>Libbaka</i> of the Abyssinians (Dan- akil).	<i>Tauw</i> in the Lake Ngami countries.

Any description of such a familiar animal as the lion (the only cat in which the male is furnished with a mane on the head and shoulders, and a tuft of long hair to the tip of the tail) would obviously be superfluous here. One of the great points of interest attaching to the species is its wide geographical distribution; and it has not yet been determined that the Indian form can be separated as a distinct race, the alleged absence of the mane having been shown to be inconstant. Neither can black-maned and yellow-maned lions be regarded as distinct forms, since examples of both may be met with in one and the same litter. Somali lions seem, however, to run smaller than those from either the Cape or Algeria, although their manes are often very fine. Heights of 3 feet $4\frac{1}{2}$ and 3 feet 8 inches at the shoulder have been recorded in African specimens (the larger measurement by F. C. Selous), and 3 feet 6 inches in an Indian example (by Gen. W. Rice). Colonel Paget estimated the weight of a Somali lion at about 550 lbs. Wild lions never develop the enormous manes frequently seen in menagerie examples.

Distribution.—At the present day Africa from Algeria to the Cape, Mesopotamia on the west flanks of the Zagros range, Persia south of Shiraz, and India in the districts of Kathiawar, Sind, the Central Provinces, and Bundelcund. Now very rare in the latter country.

LION (*Felis leo*).

Total length before skinning.	Length from nose to root of tail.		Skin measure- ment from tip of nose to tip of tail.		Height at shoulder.		Girth at forearm.		Girth behind shoulder.	Weight.	Description.	Locality.	Owner.
ft. in.	ft.	in.	ft.	in.	ft.	in.	in.	in.					
-10 5 (A)	...	...	10 10½	3 7	...	...	...	...	...	...	Full black mane	S. E. Africa	F. Vaughan Kirby.
-10 4	7 2	11 4	(raw)	...	20	...	...	...	...	...	...	?	Do.
-10 4	...	...	...	...	...	...	...	...	...	...	...	Somaliland	Count T. Zamoyski.
-10 0	6 10	...	...	3 6	22 (upper arm)	57	434	...	...	...	Fine mane	Edmund's Menagerie	W. Yellowby.
-9 11 (C)	...	11 9 (raw)	...	3 8	...	...	410	...	...	...	Do.	Hartley Hills, Mashonaland	F. C. Selous.
-9 10½ (D)	6 8	10 8 (dressed)	...	3 6	19½	51½	516	...	...	...	Do.	British East Africa	Capt. R. A. J. Montgomerie, C.B., R.N.
-9 10	...	...	...	...	...	...	...	...	...	...	Fair mane	Mashonaland	Sir John Willoughby, Bart.
-9 10 (E)	...	...	...	...	...	...	...	...	...	...	Do.	Limpopo	T. E. Buckley.
-9 10 (H)	...	12 1½ (raw)	...	3 7	...	49½	...	...	...	...	Full black mane	Mushukulumbwe	Major A. St. H. Gibbons.
-9 10	7 0½	10 10	...	...	...	...	...	...	...	...	Yellow and black mane	Somaliland	J. Johnston Stewart.
-9 10 (K)	...	11 6	...	...	...	...	...	...	...	...	Do.	Do.	A. E. Leatham.
-9 8	6 6½	...	...	3 4½	15½	...	...	...	...	...	Fully yellow mane	Zomba, B. C. Africa	R. G. Beswick.
-9 8-13	6 10	...	...	...	...	...	...	...	...	...	...	East Africa	Prince Henry of Liechtenstein.
-9 8	...	...	...	...	...	...	...	...	...	...	Yellow mane	Oliphant River	James J. Harrison.
-9 7	...	11 3	...	...	...	...	...	...	...	...	Fine mane	North Somaliland	Norman B. Smith.
-9 7 (11)	...	...	...	...	...	...	...	...	...	...	Do.	Kathiawar, India	Lord Harris, G.C.S.I.

-9 7	6	8½	...	...	...	...	...	...	East Africa	Prince Henry of Liechtenstein.
-9 6	...	...	...	...	...	...	...	...	Somaliand	Major A. E. Sandbach.
-9 5	6	6	...	...	...	...	...	...	Do.	Lieut.-Col. L. L. Fenton.
-9 4½	...	...	...	...	...	...	...	...	Do.	James J. Harrison.
-9 4	...	...	10	11	3	11	...	...	Somaliand	A. E. Pease.
-9 4	...	...	9	6	...	...	...	...	Do.	Count J. Potocki.
-9 3	6	6	10	3	3	11	16	45	Wellmaned, partially black	Count Scheibler.
-9 3	...	...	11	0	...	...	...	...	Do.	C. V. A. Peel.
-9 2 (f)	...	...	10	0	...	...	...	48	Black mane	Major T. R. Harkness.
-9 2	...	...	10	9½	...	...	...	...	Do.	Capt. M. McNeill.
-9 2	...	...	...	...	...	...	...	...	Lioness	Lord Delamere.
9 1	...	...	11	0	3	4	17	48½	Fair mane	Pungwe, S. E. Africa
-9 1	6	1	9	7½	3	6½	15	44	Light coloured mane	Somaliand
-9 1 (G)	...	...	10	4	...	...	...	...	Fine black mane	Do.
-9 1	...	...	10	4	...	...	...	...	Good mane	Do.
-8 10	6	0½	9	1½	...	...	...	...	Lioness	J. Johnston Stewart.
-8 9½	...	...	...	...	...	...	...	490	...	Central India
-...	...	...	9	5½	...	...	...	...	...	Somaliand
-8 7½	...	...	9	2	3	3	...	...	Lioness	?
-8 6	...	...	9	7	...	...	...	...	Old lioness	British East Africa

Capt. R. A. J. Montgomery,
C.B., R.N.

In the accompanying list of skull measurements many will be found belonging to the skins on p. 454.

I have not yet seen a Somali skull measuring over 15 inches. A lion skull may be easily recognised when placed beside that of a tiger by observing that in the lion all the terminations of the sutures of the skull on the frontal are almost level; in a tiger the nasal bones extend much further back—besides this a lion skull will stand much flatter on a table than that of a tiger.

Skulls.

Basil length from back to front.	Width across the zygomatic arches.	Weight cleaned.	Locality.	Owner.
16½ (A)	10	...	South-East Africa	F. Vaughan Kirby.
16 (end broken)	10½	5 lbs.	East Africa . .	E. Gedge.
-15½	9½	6 lbs.	South Africa . .	J. Lamont.
15½ (D)	10½	5 lbs. 3 oz.	East Africa . .	Capt. R. A. J. Montgomerie, C.B., R.N.
15½	9½	...	Pungwe . .	Hon. T. Thynne.
-15½ (H)	9½	...	Mushukulumbwe .	Major A. St. H. Gibbons.
15	10	...	Mashonaland . .	Basil H. Woodd.
-15	10	...	Somaliland . .	J. D. Inverarity.
15	10	...	Benguela . .	G. W. Penrice.
15	9½	...	Beira . .	H. T. and A. H. Glynn.
15	9½	...	Athi Plains . .	C. F. S. Vandeleur, D.S.O.
15	10	...	Somaliland . .	Col. Arthur Paget.
15 (C)	10	5½ lbs.	South-East Africa	F. C. Selous.
14½	10½	...	East Africa . .	Lord Delamere.
14½	9	...	Matabeleland . .	Capt. Sir K. Fraser, Bart.
14½	9½	4 lbs.	South Africa . .	Sir Edmund G. Loder, Bart.
-14½ (E)	9½	...	Limpopo . .	T. E. Buckley.
14½	9½	...	Matabeleland . .	Capt. Sir K. Fraser, Bart.
14½ (G)	9½	...	Somaliland . .	Capt. G. Campbell.
-14½	8½	3½ lbs.	Nyasaland . .	Dr. Percy Rendall.
14½	9½	...	Somaliland . .	Lieut.-Col. J. W. H. Flanagan.
14½	9½	4½ lbs.	Do. . .	Rowland Ward.

LION (*Felis leo*). Skulls—*continued*.

Basil length from back to front.	Width across the zygomatic arches.	Weight cleaned.	Locality.	Owner.
-14 $\frac{1}{2}$ (K)	9 $\frac{1}{2}$	...	Somaliland . .	A. E. Leatham.
14 $\frac{1}{8}$	9	...	Matabeleland .	Col. R. S. S. Baden-Powell.
♀ 14 $\frac{1}{8}$	8 $\frac{3}{4}$	...	South-East Africa	F. Vaughan Kirby.
14	10	...	Somaliland . .	Capt. C. J. Melliss.
-14	9 $\frac{5}{8}$	...	Do. . .	H. W. Seton-Karr.
14	9 $\frac{1}{2}$	...	Do. . .	Lord Delamere.
-14 (I)	9 $\frac{1}{2}$	4 lbs.	British East Africa	Count Scheibler.
13 $\frac{3}{4}$	9 $\frac{1}{2}$	...	Somaliland . .	Lord Wolverton.
13 $\frac{3}{4}$	9 $\frac{1}{2}$	...	Do. . .	E. W. S. Brooke.
-13 $\frac{3}{4}$	9 $\frac{1}{2}$	...	Do. . .	C. V. A. Peel.
-13 $\frac{1}{2}$	8	...	South Africa .	Dr. W. P. Y. Bainbrigge.
13 $\frac{3}{8}$	8 $\frac{5}{8}$	...	Zomba . .	A. H. Sharp.
13 $\frac{1}{2}$	8 $\frac{1}{8}$	...	Mashonaland .	Sir John Willoughby, Bart.
13 $\frac{1}{2}$	9	...	Kathiawar, India.	Lord Harris, G.C.S.I.

TIGER (*Felis tigris*).

A much less noisy animal than the lion, the great striped cat of Asia is also a more variable species, of which at least three local races may be recognised. First, we have the typical Bengal tiger, a large, long-limbed, lithe, and short-haired creature. A much smaller and rougher-haired race (*F. tigris virgata*) inhabits the Caspian provinces of Persia, and it is probably this form that extends into the Caucasus. Lastly, we have the Manchurian tiger (*F. tigris longipilis*), characterised by its large size, heavy build, short limbs, and the great length and thickness of the fur, which is often much less fully striped than in Indian specimens. The dimensions attained by tigers are given in the subjoined table.

Distribution.—From the Caucasus through Northern Persia, Afghanistan, India, Assam, Burma, the Malay Peninsula, Sumatra, Java, and China, to Manchuria and Amurland. In India ranging from an elevation of some 7000 feet in the Himalaya to Cape Comorin, but unknown in Ceylon.

Length from nose to tip of tail
 before skinning 10 ft 1½ in
 dried skin 11 - 7 -

TIGER (Felis tigris)—continued.

[illegible]

-10	...	...	...	...	...	...	Nilgiri Hills	Sir Edmund G. Loder, Bart.
-9 11	6 9	...	50½	28½	20½	37	Kuch Behar	Count E. Hoyos.
-9 11	6 6	11 2	54	...	...	...	Rewa, C.P..	Do.
-9 11	...	11 1½	...	...	...	...	Nepal .	A. E. Leatham.
-9 10½	6 11	...	54	29	19½	39½	Kuch Behar	Maharaja of Kuch Behar.
-9 10½	6 10½	12 10	...	...	...	...	Do.	Capt. S. H. Pollen.
-9 10	...	...	...	...	...	3 9	Hyderabad .	Capt. Hon. R. H. Marsham and Lieut. Sutton.
-9 10	6 6	...	...	...	...	...	Nepal Terai	Major B. B. Russell.
-9 10	...	11 8	...	...	...	...	Hyderabad, Deccan	A. M. Rotheram.
-9 9	...	...	...	...	...	...	Central Provinces	James J. Harrison.
-9 8½	...	...	48	24½	17	34½	Hyderabad, Deccan	Capt. C. E. G. Norton and Capt. Sir K. Fraser, Bart.
-9 8	6 8	...	...	...	...	...	Kuch Behar	Count E. Hoyos.
-9 8	...	...	45	...	...	...	Terai .	Lieut.-Col. B. D. Möller.
-9 8	...	...	...	...	...	...	Philipp	Capt. J. H. Gwynne.
-9 8(B)	...	...	...	...	...	...	North Kanara	Lieut.-Col. L. L. Fenton.
-9 8	...	...	...	...	...	...	?	Lieut.-Col. F. H. Whitby.
-9 7	...	...	...	...	...	437	Rewa, C.P..	O. V. Bosanquet.
-9 7	...	11 4	...	...	...	...	Do.	The late Sir Samuel Baker.
-9 6	6 3	...	...	...	...	...	Do.	Count E. Hoyos.
-9 6	...	...	...	...	...	...	Hyderabad, Deccan	Major G. A. L. Carew, D.S.O., and Capt. G. L. Holdsworth.
-9 6	...	10 9	...	...	...	...	Deccan .	Capt. Frank Lee.
-9 5	...	...	...	...	...	...	Do.	J. D. Inverarity.
-9 5	6 4	10 4½	49	26	18	32½	Kuch Behar	Count Scheibler.

TIGER (*Felis tigris*)—continued.

Length before skinned.	Length of body.		Length dressed.	Girth of body.		Upper arm.	Girth. Fore arm.	Head.	Height at shoulder.		Weight.	Locality.	Owner.
	ft.	in.	ft.	in.	inches.	ft.	ft.	ft.	ft.	in.	lbs.		
-9 4½	...	...	...	...	...	...	...	...	...	...	...	Rewa, C. P.	C. C. Branch.
-9 4	...	...	11 6	...	...	...	...	...	...	...	418	Kuch Behar	Capt. Hugh Fraser.
-9 4	...	...	...	...	...	...	...	...	...	...	...	Mount Abu	Capt. H. B. Dalgety.
-9 3½	6 0	...	...	44	...	...	...	...	...	...	...	Near Rewa, C.P.	Capt. H. P. Lane.
-9 3½	...	...	...	...	...	...	...	...	...	...	...	Do.	H. de Barreto.
-9 9 3	6 3	...	...	41	22	16	36	2 10	360	Kuch Behar	Maharaja of Kuch Behar.		
-9 3	...	...	...	...	...	...	...	...	...	...	...	Eastern Bengal	O. V. Bosanquet.
-9 3	6 4	...	...	56	...	20½	39	...	over 563	Central Provinces	Capt. W. H. Hunter.		
-9 3	6 4½	...	...	...	...	...	...	...	448	Do.	Bombay Natural History Society's Journal.		
-9 3	...	9 3½	...	...	...	...	...	...	...	Chanda, C.P.	Capt. M. McNeill.		
-9 9 2	...	...	...	...	...	...	...	...	...	Nepal	A. E. Leatham.		
-9 9 1	...	...	...	...	...	...	...	...	...	Ram Naydr, N.W.P.	Capt. B. H. Boucher.		
-9 9	...	...	...	...	...	...	...	...	...	North Kanara	Lieut.-Col. L. L. Fenton.		
-9 9 0	...	...	...	...	...	...	...	...	...	Deccan	Capt. Frank Lee.		
-9 8 10	...	...	...	...	...	...	...	...	...	Hyderabad, Deccan	Major G. A. L. Carew, D.S.O, and Capt. G. L. Holdsworth.		
-9 8 8	...	...	...	...	...	...	...	...	...	Gwalior	Viscount Edmond de Poncins.		
-9 8 7	...	...	...	...	...	...	...	...	...	Rewa, C.P.	C. C. Branch.		
-9 8 7	...	...	...	...	...	...	...	...	...	Do.	O. V. Bosanquet.		
-9 8 5½	...	...	...	...	...	...	...	...	345	Bignor District	Surgeon-Capt. E. McK. Williams.		

TIGER (*Felis tigris*)—continued.

Skulls.

Basal length from back to front.	Breadth across the zygomatic arches.	Weight cleaned.		Locality.	Owner.
		lbs.	oz.		
-15 $\frac{3}{4}$	...	...		Kuch Behar . . .	Maharaja of Kuch Behar.
-15 $\frac{1}{4}$	10 $\frac{7}{8}$	...		N.E. Bengal . . .	A. M. Murdoch.
-15 $\frac{1}{4}$	10 $\frac{1}{2}$	...		Purneah . . .	R. A. Sterndale.
-15 (A)	10 $\frac{1}{2}$	...		Bengal . . .	Col. Evans Gordon.
15	10 $\frac{1}{2}$	...		?	Rowland Ward.
14 $\frac{7}{8}$ (F)	10	...		Duars . . .	Capt. S. H. Pollen.
14 $\frac{1}{2}$	9 $\frac{3}{4}$	4	10	Do. . .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	10 $\frac{3}{8}$	...		Deccan . . .	W. J. R. Wingfield.
-14 $\frac{1}{2}$	10	...		Terai . . .	Bombay Natural History Society's Museum.
14 $\frac{1}{2}$	10 $\frac{1}{8}$	...		Central Provinces .	Capt. W. H. Hunter.
-14 $\frac{1}{2}$ (C)	10 $\frac{1}{2}$	...		Bignor District, C.P.	A. M. Markham.
14 $\frac{1}{2}$	10 $\frac{3}{8}$	...		Central Provinces .	Capt. E. A. D'Arcy Thomas.
14 $\frac{1}{2}$ D)	9 $\frac{1}{2}$	...		Kanara Jungles .	W. Holland.
14 $\frac{1}{2}$ (E)	9 $\frac{1}{2}$	...		Terai . . .	R. Nolan.
-14	10	...		?	J. D. Inverarity.
-14	10 $\frac{9}{16}$	...		Bignor District .	A. M. Markham.
13 $\frac{7}{8}$	9 $\frac{3}{4}$	...		?	Capt. S. H. Pollen.
13 $\frac{3}{4}$	9 $\frac{1}{2}$	...		Indhaorée, Nimar .	Lieut.-Col. H. Wade-Dalton.
13 $\frac{3}{4}$	9 $\frac{3}{4}$	...		?	Philip Wood.
13 $\frac{3}{4}$	9 $\frac{1}{2}$	...		Madras . . .	Col. J. Hinde.
-13 $\frac{3}{4}$ (B)	9 $\frac{1}{2}$	...		North Kanara .	Lieut.-Col. L. L. Fenton.
13.70	9	...		Duars . . .	Mrs. Lawrie-Johnstone.
-13 $\frac{1}{2}$	9 $\frac{1}{2}$	3	14	?	Major J. W. M. Cotton.
13 $\frac{3}{8}$	9 $\frac{7}{8}$	...		Kumaun Terai .	H. J. Boas.
-12 $\frac{1}{2}$	8 $\frac{1}{4}$	...		Bignor District, C.P.	A. M. Markham.

Skins.

Length of skin dressed.		Locality.	Owner.
ft.	in.		
13	6	Chinese Mongolia . . .	A. Bignold.
12	6	Do. . .	Rowland Ward.
11	3 $\frac{1}{2}$	Do. . .	W. H. Walker.
12	0	Do. . .	H. R. H. le Duc d'Orléans.

A, B, C, D, E, F. For skins see p. 460.

LEOPARD (*Felis pardus*).

The leopard has an even larger range than the lion, and is probably the most widely distributed of all the cats. Sportsmen in India recognise a larger "panther" and a smaller "leopard," although naturalists fail to distinguish them as separate forms. The African and Indian leopards are also generally regarded as identical, but since the former has the spots on the body of smaller size than in the latter, and many of them without light centres, like those on the head, it is quite probable that it constitutes a different race. In Persia, Baluchistan, and the mountains of Sind is found a variety of the leopard (*F. pardus tulliana*) characterised by its pale colour, long fur, and thick tail; it is to some extent intermediate between the typical race and the ounce. Lastly, there is the Chinese leopard (*F. pardus fontanieri*), a very distinct animal, of heavy build, with a pale ground-colour to the fur, which is very long and thick, and the spots in the form of large complete rings, without any smaller spots in the centre. In the moist forest districts of Asia black leopards are by no means uncommon; and there is a tendency to darkening of a different type in some South African specimens. Height at shoulder from about 2 feet (India) to 2 feet 4 inches (Africa). A large leopard killed by Lieut.-Col. L. L. Fenton in the Gir forest, Kathiawar, measured 7 feet 8½ inches in length; the length of the tail being 35½ inches, the girth of the neck 21½ inches, of the forearm 11½ inches, and of the body behind the shoulder 35½ inches; weight, 160 lbs.

Distribution.—Africa, the Caucasus, Asia Minor, and Asia generally, with the exception of Northern Siberia, the Tibetan plateau, and perhaps Japan.

a.—Indian Specimens.

	Male		Female	
	ft.	in.	ft.	in.
Length from tip of nose to end of tail	7	0	6	4
" " root of tail	4	3½	3	7
Height at shoulder	2	2½	1	9
Girth	2	7	2	1
Circumference of upper arm	0	13	0	10
" forearm	0	10½	0	8½

Shot in Ceylon by Count Scheibler.

LEOPARD (*Felis pardus*). Indian Specimens—*continued*.

Length before skinned.		Total length dressed.		Weight.	Locality.	Owner.
ft.	in.	ft.	in.			
-8	4				Kuch Behar . .	Maharaja of Kuch Behar.
-8	2½	...	...		Do. . .	Do.
-8	1½	...	...		Do. . .	Do.
-8	0	...	...	154	Do. . .	Do.
-8	0	8	8½	...	India . . .	Count J. Potocki.
-7	10	8	4½	...	Ganges Kadir . .	See below. ¹
-7	9½	8	6	...	Central Provinces .	James J. Harrison.
-7	9	...	...	...	Nepal . . .	C. H. H. B. Caldwell.
-7	9	...	...	...	Oudh . . .	Mrs. Innes.
-7	8	...	...	...	Hyderabad, Deccan .	Capt. C. E. G. Norton and Capt. Sir K. Fraser, Bart.
-7	8	...	...	...	Ganges Kadir . .	Muttra Tent Club. ²
-7	7	8	7½	...	Siwaliks . . .	E. H. E. Green.
-...	7	10	...	...	?	Col. W. Gordon Cumming.
-7	6	...	...	...	Chaubattia . . .	Capt. R. B. Fell.
-7	1	7	10½	...	Rewa, C.P. . .	Count E. Hoyos.
-7	4½	...	...	...	Gujerat . . .	Capt. H. J. Morphy.
-97	4	8	1	145	Bignor District . .	Surg.-Capt. E. McK. Williams.
-7	4	...	...	...	Kathiawar . . .	Lieut.-Col. L. L. Fenton.
-7	3	...	...	...	?	Lieut.-Col. F. H. Whitby.
-7	1	7	11½	...	Kotah . . .	Maharaja of Bikanir.
-7	1	...	...	...	Hyderabad, Deccan .	Major G. A. L. Carew, D.S.O., and Capt. G. L. Holdsworth.
-7	0½	8	3½	...	?	Maharaja of Bikanir.
7	0	...	...	...	?	Major A. E. Ward.
-6	10	7	10	140	Bignor District . .	Surg.-Capt. E. McK. Williams.
-6	10	...	...	...	Chaubattia . . .	Capt. R. B. Fell.
-6	8	...	...	110	?	M. Loam.
-96	5	...	...	...	Chaubattia . . .	Capt. R. B. Fell.

¹ Speared by Capt. H. Hoare (5th D.G.), Capt. J. G. Rotton (R.A.), and W. Gillman (R.H.A.)² Major A. C. King and some officers of the 5th Lancers, when out with the Muttra Tent Club.

LEOPARD (*Felis pardus*). Indian Specimens—continued.

Length before skinned.		Total length dressed.		Weight.	Locality.	Owner.
ft.	in.	ft.	in.	lbs.		
—...		7	8½	...	Kuch Behar . . .	Maharaja of Kuch Behar.
- 96	2	6	5	...	Gwalior . . .	Viscount Edmond de Poncins.
- 95	11	...		...	Chaubattia . . .	Capt. R. B. Fell.
- 95	10	6	8½	96	Bignor District . . .	Surg.-Capt. E. McK. Williams.
- 95	8	6	4	80	Do. . . .	Do.
—...		7	8	...	Kuch Behar . . .	Maharaja of Kuch Behar.
¹ ...		7	8	...	? . . .	Capt. A. G. Ferguson.
—...		7	6½	140	Kuch Behar . . .	Maharaja of Kuch Behar.
—...		7	4½	...	? . . .	Col. Howard.
—...		7	4	...	Nepal	H. L. Heber-Percy.
—...		7	1	...	Do. . . .	Sir E. L. Durand, Bart., C.B.
—...		6	8	110	Madras	M. Loam.

b. AFRICAN SPECIMENS.

Length before skinned.		Weight.	Locality.	Owner.
ft.	in.	lbs.		
-7	3½	...	? . . .	Count J. Potocki.
-7	3	...	Wadelai, E. C. Africa . . .	Capt. W. P. Pulteney.
-7	2	...	Somaliland	Count Scheibler.
-7	2	...	South-East Africa . . .	F. Vaughan Kirby.
-7	1½	...	? . . .	C. V. A. Peel.
-7	0	..	Somaliland	J. Johnston-Stewart.
-6	11	...	E. C. Africa	James J. Harrison.
-6	10	...	Somaliland	Count Scheibler.
-6	10	140	Nyasaland	A. White.
-6	3	...	Somaliland	Norman B. Smith.
¹ -6	2	...	Jebba, Nigeria	The late Capt. H. W. Baker.
-6	0	...	Somaliland	Count E. Hoyos.
- 96	0	...	Do. . . .	C. V. A. Peel.
² -5	7	...	Nigeria	Lieut.-Col. T. D. Pilcher.

¹ Height at shoulder, 2 ft. 1½ in.² Height at shoulder, 22 in.; girth, 21½ in.

The following specimens were shot and measured by F. Vaughan Kirby :—

(a) Nguanetsi River, S.E.A. (b) Matamiri Bush, S.E.A.

Length, tip to tip in a straight line.		Length over all—'sportsman's' measurement.		Shoulder height.	Girth of neck.	Girth behind shoulder.	Girth of forearm.	Length of skull.	Zygomatic width.	Cleaned weight.
ft.	in.	ft.	in.	ft. in.	in.	in.	in.	in.	in.	lbs. oz.
(a) 6	11	7	2	2 7	22	35½	12½	9½	6½	1 8
(b) 6	9	7	2	2 7	20	33½	11½	9	5½	...

Leopard Skulls.

Total length.	Width.	Weight.	Locality.	Owner.
in.	in.	lbs. oz.		
-10½	6½	...	Bignor District, N.W.P.	A. M. Markham.
-10½	6½	...	Gir Forest, Kathiawar	Lieut.-Col. L. L. Fenton.
-9½	...	1 5 clean	Nyasaland	Dr. Percy Rendall.
-9½	6	...	?	Julius Jeppe.
-9½	...	...	?	Do.
-9	5½	...	S.E. Africa	F. Vaughan Kirby.
-6½	5	...	India	W. T. Blanford.

OUNCE or SNOW-LEOPARD (*Felis uncia*).

Although the Persian leopard is in some degree intermediate in respect to colour and the length of the coat, the ounce differs from the leopard by the ground-colour of the long and dense fur being dirty white, with the spots on the back, sides, and tail, in the form of large, irregular, ill-defined, and interrupted rings, and by the great thickness of the tail, which scarcely tapers, and is about three-quarters the length of the head and body. Height at shoulder about 2 feet 4 inches. Skull about 6 inches long.

Distribution.—The high ranges of Central Asia, including Gilgit, Hunza, Turkestan, Trans-Baikalia, Ladak, Tibet, Amurland and Western China, extending in the north-west to the Altai, and in the west, it is said, to Persia. In Prince Demidoff's *Hunting Trips in the Caucasus* a snow-leopard is figured as coming from that range, but

whether the animal found there is *F. uncia* or *F. pardus tulliana* may be doubtful. Generally dwelling at elevations of over 8000 feet, descending in Gilgit during winter to 6000 feet.

Length dressed.		Weight.	Locality.	Owner.
ft.	in.			
8	7	...	Tibet . . .	Rowland Ward.
-8	6	Skull, $7\frac{3}{4} + 5\frac{1}{4}$	Kashmir . . .	R. Rankin.
8	$7\frac{1}{2}$	...	Baltistan . . .	E. Langworthy.
-7	10	...	Near Leh . . .	Major S. Frewen.
-7	$5\frac{3}{4}$	...	Pamir . . .	Viscount Edmond de Poncins.
7	5	...	?	Major F. J. Harden.
-7	4	(24 inches at shoulder)		R. A. Sterndale.
-7	3	...	?	Major A. E. Ward.

CLOUDED LEOPARD (*Felis nebulosa*).

The *arimau dahan*, as this species is called by the Malays, is the size of a small leopard, with a very long and thickly furred tail, and large upper tusks. The ground-colour of the fur varies from grayish brown to fulvous, upon which are large dark blotches, frequently bordered in part with black. In old specimens the blotches often disappear, leaving only the black borders.

Distribution.—From the Sikim and Bhutan Himalaya, through Assam, Burma, Siam, and the Malay Peninsula, to Sumatra, Java, and Borneo. Represented by a smaller variety (*F. nebulosa brachyurus*) in Formosa.

Length dressed.		Weight.	Locality.	Owner.
ft.	in.	lbs.		
-6	6	...	Assam . . .	The late B. H. Hodgson.
-6	4	$44\frac{1}{2}$	?	R. A. Sterndale.
5	9	...	?	B. R. M. Glossop.
5	$7\frac{1}{2}$	...	Assam . . .	The late B. H. Hodgson.
5	$7\frac{1}{2}$	...	Do. . . .	P. Russel.

SKULL.

Basal length from back to front.	Breadth.	Locality.	Owner.
6.2 in.	4.75	Assam . . .	The late B. H. Hodgson.

JAGUAR (*Felis onca*).

This cat may be regarded as the American representative of the leopard, which it fully equals, even if it does not exceed, in size. The colour and markings are generally similar to those of the latter, but the dark rings are larger and arranged more definitely in groups, each ring usually enclosing one or more dark central spots, and the enclosed light area being of the same tint as the general ground-colour of the fur, which is typically of a rich tan. Usually seven or eight more or less distinct longitudinal rows of rosettes may be noticed on each side of the body.

Distribution.—America, from Louisiana, Texas, and Northern Mexico to about the Rio Negro, on the northern confines of Patagonia in lat. 40° S.

Length before skinning.	Length dressed.	Locality.	Owner.
ft. in.	ft. in.		
-9 3	9 3	Brazil . . .	Count Henry Coudenhove.
-8 3½	...	Do. . . .	Do.
-6 11	7 9	Paraguay . . .	James J. Harrison.
...	7 7	British Guiana . . .	Sir A. W. L. Hemming, K.C.M.G.

PUMA (*Felis concolor*).

With the exception of the much smaller and longer-tailed yaguarondi, the puma (pronounced pooma) is the only uniformly coloured cat found in America, where its range extends from British Columbia and Maine in the north to the Strait of Magellan in the south. The size is inferior to that of the jaguar, the height at the shoulder being about 2 feet, and the weight 150 lbs. The general colour of the fur is tawny, tending, like that of the Virginian deer, to reddish in summer, and to grayish in winter, with the middle of the back darker, and a whitish patch on the back of the otherwise black ears. But with such an enormous geographical range, it is inevitable there should be much local variation; and American writers recognise more than one species. *F. concolor oregonensis*, of the north-west coast, may be admitted as a local race, as may *F. concolor puma* of South America.

Length in the field.	Weight.	Locality.	Owner.
ft. in.	lbs.		
-8 6	about 150	...	A. Pendarves Vivian.
-7 6½	...	Brazil	Count Henry Coudenhove.
-7 5	...	Gallegos River, Patagonia . . .	W. Moncreiffe.
-7 3	...	Fraser River, British Columbia .	J. Fannin.
-7 0	...	Wyoming	J. L. Scarlett.
-5 9	...	South America	James J. Harrison.

LYNXES (*Felis lynx*, etc.).

The lynxes form a well-marked group connected with the more typical members of the cat tribe by the jungle-cat (*F. chaus*), and distinguished by the tuft of long hairs at the summit of the ears, and the absence of the first upper cheek-tooth. From the others the caracal (*F. caracal*), of Africa and India, is broadly distinguished by its long tail and uniform rufous colour. The short-tailed lynxes are, however, a group in which it is very difficult to determine whether the variations indicate distinct species or local races. In the typical European lynx (*F. lynx*) the tail is very short, the throat has a ruff of long hair, and the coat is spotted with dark brown. The Tibet lynx (*F. lynx isabellina*) is certainly only a pale variety. Probably the Canadian lynx (*F. lynx canadensis*), which may be identical with the lynx of Northern Europe and Asia, should hold the same rank; it ranges in America as far south as California. More doubt exists whether the red lynx (*F. rufa*), which is also widely extended in America, should be regarded as a separate race, but the so-called plateau lynx (*F. baileyi*) seems certainly only a variety of the former inhabiting the high grounds of Colorado, Utah, and Arizona. On the other hand, from differences in the form of the skull, the Spanish lynx (*F. pardina*), which is a fully spotted animal, seems rightly regarded as a distinct species. It ranges over a large portion of Southern Europe, including Turkey, Greece, Sicily, Sardinia, and Spain and Portugal. The ordinary lynx stands from 16 to 18 inches at the shoulder.

a. EUROPEAN LYNX.

Length on the field, nose to root of tail.	Locality.	Owner.
-42.9 in.	Eastern Carpathians	Prince Henry of Liechtenstein.

b. TIBET LYNX.

Height at shoulder, 16 or 18 inches.

c. CANADIAN and RED LYNX.

Length on the field, nose to root of tail.	Height at shoulder.	Weight.	Locality.	Owner.
¹ -38 in.	25	60 lbs. (about)	Wyoming . . .	Capt. G. Dalrymple White.
² -32 "	22	40 lbs. (about)	Nova Scotia . . .	Do.
		¹ Canadian Lynx.	² Bay Lynx.	

d. CARACAL.

Flat skin.	Locality.	Owner.
46½ in.	Nr. Grahamstown, S. Africa	Dr. H. Smith.

HUNTING-LEOPARD or CHITA (*Cynælurus jubatus*).

Although this animal is commonly called chita (cheetah) by Anglo-Indian sportsmen, that name is at least as often applied in India to the leopard. From all the true cats and lynxes the hunting-leopard differs by the claws being capable of only partial withdrawal into their sheaths, so that their tips are always exposed. The body also is more slender, and the limbs are proportionately longer. The black spots on the skin are small and without light centres, like those on the head of the leopard. Length 7 feet or less, height at shoulder 30 to 39 inches. A specimen speared by Lieut.-Col. L. L. Fenton in Kathiawar measured 6 feet $\frac{1}{4}$ inch in length, the tail being 2 feet $2\frac{1}{4}$ inches.

The animal is the "Ihlose" of the Zulus and Swazis, and is distributed sparsely throughout S.E. Africa. They usually hunt in couples, and fairly stalk their game, securing it with a swift rush at the last. Mr. F. Vaughan Kirby says: "I have seen a party of six hunting together and another of eight. Though I have often tried, I have never yet succeeded in running into one on horseback; they are incredibly swift of foot. They invariably kill their prey by strangulation."

Distribution.—Africa and South-Western Asia, extending from Persia to Western Turkestan and the countries east of the Caspian, and eastwards into India; unknown in the latter country on the Malabar coast and to the north of the Ganges, as it also is in Ceylon. The African hunting-leopard is stated to differ by its more woolly coat, and if this be the case, should be known as *C. jubatus laneus*.

Shot in the Eastern Transvaal by F. Vaughan Kirby.

Total length in straight line. 6 ft. 8 in.		Do. over all. 7 ft. 7 in.	Tail. 2 ft. 9 in.	Vertical height. 2 ft. 11 $\frac{1}{2}$ in.	Girth of forearm. 8 $\frac{1}{4}$ in.	Do. shoulders. 31 in.
Length. ft. in.	Length of tail. ft. in.	Height at shoulder.	Locality.		Owner.	
-7 0	...	...	India	.	.	R. A. Sterndale.
-6 0 $\frac{1}{4}$	2 2 $\frac{1}{2}$	...	Near Rajkot, Kathiawar			Lieut.-Col. L. L. Fenton.
-6 4 $\frac{3}{4}$	2 3 $\frac{1}{2}$	28 $\frac{1}{2}$	N.E. Transvaal	.	.	Dr. Percy Rendall.
-6 4	...	...	90 lbs. Somaliland	.	.	J. Johnston-Stewart.
-6 1 $\frac{1}{2}$	...	...	Do.	.	.	C. V. A. Peel.
-6 0	...	...	Do.	.	.	Do.

SPOTTED HYÆNA (*Hyæna crocuta*).

Somali *Uaraba*.
 Danakil *Yangula*.
 Abyssinian *Jib*.

Setongwani in the Barotse country.
Piri in the Lake Ngami country.
Chimbwi in the Chilala and Chibisa
 countries.

The hyænas form a small family of Carnivora allied in some respects to the cats, but distinguished by the form of the skull, the more numerous teeth (which are, however, to a considerable extent cat-like), and the four-toed feet, with non-retractile claws. The spotted hyæna is the largest of the three species, and takes its name from the large dark blotches on its tawny coat. Its carnassial teeth are more cat-like than those of the other species.

Distribution.—Africa, south of the Sahara.

Nose to root of tail in a straight line, 4 feet $9\frac{1}{2}$ inches. Length of tail, 1 foot 1 inch.

Extreme length over all, 6 feet 3 inches.

Vertical standing height, 3 feet.

Girth behind shoulders, $39\frac{1}{2}$ inches.

SKULLS.

Length.	Width.	Weight.		Locality.	Owner.
in.	in.	lbs.	oz.		
-12 $\frac{1}{4}$	7 $\frac{1}{4}$	2	8	South-East Africa .	F. Vaughan Kirby.
-12 $\frac{1}{4}$	7 $\frac{3}{8}$	2	12	Zomba, B.C.A. .	D. MacAlpine.
-11	7 $\frac{1}{2}$	...		Soinaliland .	Viscount Edmond de Poncins.
-11	6 $\frac{7}{8}$	...		South-East Africa .	F. Vaughan Kirby.
-10 $\frac{3}{8}$	6 $\frac{7}{8}$	2	3	East Africa .	Capt. R. A. J. Montgomerie, C.B., R.N.

1898

Brown Bear.

BEARS (Ursidae).

Bears are so unlike other animals and so like one another that no one has the slightest difficulty in recognising a member of the group when he sees it. They constitute a family of Carnivora—the *Ursidae*—and are spread over the greater part of the globe, with the exception of Africa to the south of the Sahara desert, and the Australasian islands. As some of their leading characteristics may be mentioned their large bodily size, clumsy build, shaggy fur, generally uniform coloration, the very short tail, and the application of the whole sole of the foot to the ground in walking. The skull and teeth are likewise very peculiar and

distinctive, although these need not be taken into consideration in this place.

In consequence of the marked similarity to one another of most members of the group, it is a matter of extreme difficulty to come to a definite conclusion as to the number of species of bears—not that this is a matter of very much importance one way or another. The typical member of the group is the familiar brown bear (*Ursus arctus*) of Europe, whose colour is generally a darker or lighter shade of brown, but occasionally tends to grayish. The Syrian bear (*U. arctus syriacus*), in which this grayish tinge predominates, may be regarded as a local variety, and the same is the case with the snow-bear of Kashmir (*U. arctus isabellinus*), in which the colour is generally a light creamy brown. European specimens probably seldom exceed eight feet, but the huge Kamschatkan bear (*U. arctus collaris*) grows to nine feet. Even more gigantic is the Kadiak bear (*U. arctus middendorfi*) of Kadiak Island, Alaska; while the Yezo bear (*U. arctus yesoensis*) of Japan is another large form, with much the external appearance of a grizzly. The Alaskan bear (*U. arctus dalli*), from the mainland of Alaska, is also a huge animal, slightly smaller than the one from Kadiak Island, with more resemblance to an ordinary brown bear than to a grizzly. The typical grizzly of the Rocky Mountains is a smaller animal, with longer and straighter claws, but scarcely entitled to rank as more than another local race (*U. arctus horribilis*), next to which comes the Barren Ground bear (*U. arctus richardsoni*). Finally, the last animal which can be included in this group of the genus is the African bear (*U. arctus crowtheri*), of North-Western Africa, still imperfectly known. The extinct cave-bear (*U. spelæus*) is a large species allied to the brown bear.

The little blue bear (*U. pruinosus*) of Tibet, with more or less of white on the head and shoulders, seems to form a distinct species. The same is the case with the American black bear (*U. americanus*), which is generally black, and exhibits distinctive features in the skull and teeth. Not improbably the Himalayan black bear (*U. torquatus*) is a relative of the last-named species; it may be recognised by the conspicuous white gorget on the breast. In Japan it is represented by the Japanese black bear (*U. japonicus*). The smallest species of the genus are the very distinct Malayan bear (*U. malayanus*), and the allied spectacled bear (*U. ornatus*) of the Peruvian Andes, the latter distinguished by the light-coloured rings around the eyes, from which it derives its name.

The most distinct of all the species included in the genus *Ursus* is

the Polar bear (*U. maritimus*), so distinct, indeed, that many naturalists think it ought to form a group by itself. Externally its chief characteristics are its white coat, and the presence of a certain amount of hair on the soles of the feet; both these peculiarities being evidently adaptations to the Arctic habitat of the animal. It has been recently stated that very old Polar bears exhibit a tendency to the development of a brownish tinge in the fur. Last of all come the Indian sloth-bear (*Melursus ursinus*), and the parti-coloured bear (*Elurops melanoleucus*) of Tibet, both of which are so different from the other kinds as each to form a genus by itself. The former is too well known an animal to need description, some of its characteristics being the long and bare snout, the ragged, wiry hair, extensile tongue, small cheek-teeth, and the diminished number of front teeth. From all its kindred the second differs by its pied fur, as it does by its remarkably-formed cheek-teeth, which are broader and shorter than in other bears.

a—SKULLS.

Basal length from back to front.	Width across the zygo- matic arches.	Weight cleaned.	Race, or Species.	Locality.	Owner.
in.	in.	lbs. oz.			
18 $\frac{3}{4}$	11 $\frac{3}{8}$	12 0	Cave bear	Europe . .	Sir Edmund G. Loder, Bart.
18	11	10 0	Kamschat- kan	Siberia . .	Hon. Walter Rothschild.
-16 $\frac{1}{2}$	...	...	...	Alaska . .	H. W. Seton-Karr.
16	9 $\frac{3}{8}$	6 3	Polar	Arctic Seas .	Rowland Ward.
16	9 $\frac{1}{2}$	5 8	Do.	Nova Zembla.	J. Lamont.
15 $\frac{1}{2}$ (D)	9 $\frac{1}{2}$	5 10	Grizzly	Brit. Columbia	Sir Peter Walker, Bart.
15 $\frac{3}{8}$	9 $\frac{1}{4}$	4 10	Kamschat- kan	Kamschatka .	Lieut. R. E. R. Benson, R.N.
15 $\frac{7}{8}$	10 $\frac{1}{2}$	5 13	Polar	Polar Seas .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	9	5 14	Do.	Franz Josef Land	Jackson-Harmsworth Expedi- tion.
14 $\frac{1}{2}$	8 $\frac{1}{2}$	4 8	Grizzly	Brit. Columbia	S. B. Bennett.
14 $\frac{3}{8}$ (C)	8 $\frac{1}{2}$	5 0	Do.	New Mexico .	Montague Stevens.
13	9 $\frac{3}{8}$	...	Polar	Spitzbergen .	The late Capt. Townley Parker.
-12 $\frac{7}{8}$	7	...	Sloth	Mysore . .	Capt. M. M'Neill.
12 $\frac{1}{2}$	7 $\frac{3}{8}$	...	Do.	Cent. Prov. .	C. F. Egerton.
12 $\frac{1}{2}$	7	...	Grizzly	Wyoming . .	J. L. Scarlett.
12 $\frac{1}{2}$ (B)	6 $\frac{1}{2}$	...	Sloth	Cent. Prov. .	Surgeon-Major M. O'C. Drury.
12 $\frac{3}{8}$	7 $\frac{3}{8}$	...	Snow	Kashmir . .	A. Ezra.
12 $\frac{3}{8}$	7 $\frac{3}{8}$	...	Grizzly	Wyoming . .	J. L. Scarlett.
12	7 $\frac{1}{2}$	...	Sloth	Cent. Prov. .	C. F. Egerton.
11 $\frac{3}{4}$	7 $\frac{1}{2}$	...	Snow	Kashmir . .	W. R. Bindloss.
11 $\frac{1}{2}$ (A)	6 $\frac{1}{2}$	...	Brown	W. Caucasus .	St. George Littledale.
-10	6.8	...	Black	Nepal . .	W. T. Blanford.
-8.5	8.3	...	Malayan	Borneo . .	Do.

BEARS (*Ursidae*)—*continued*.

b—SKINS.

Length from nose to tip of tail.		Height at shoulder.		Girth.	Weight.	Race, or Species.	Locality.	Owner.
ft.	in.	ft.	in.	ft. in.	lbs.			
-13	6 ¹	...	...	...	1656	Kadiak Island	English Bay, Kadiak Is- land, Alaska	J. C. Tolman.
-11	6½ ¹	10 2 ² (from one front paw to other)	...	...	1536	?	Nevada, 1881	W. F. Sheard.
9	10 ¹	...	...	...	...	Alaskan	Alaska .	Rowland Ward.
9	8 ¹	...	...	...	...	Do.	Do. .	Cape Town Museum.
9	5 ¹	...	...	...	...	Do.	Do. .	Dublin Museum.
9	5	4 6	...	...	...	Polar .	Baffin Bay .	W. Livingstone Lear- month.
9	5 ¹	...	...	...	...	Alaskan	Alaska .	Hon. Walter Rothschild.
8	10 ¹	4 0 (mounted)	...	...	...	Do.	Do. .	British Museum.
8	7	...	...	...	1600	Polar .	Arctic Seas .	Captain Lyon.
8	7	...	...	...	...	Do. .	Spitzbergen .	A. Barclay Walker.
8	6	...	...	...	...	Do. .	Franz Josef Land	Dr. S. H. T. Armitage.
-8	5	...	...	...	...	Black .	Kashmir .	Capt. W. Westropp White.
8	4	...	...	...	...	Do. .	?	Surg.-Capt. W. White.
8	3	...	...	...	...	Kams- chatkan	Kamschatka .	Dr. F. H. H. Guillemard.
-8	0½	...	...	...	...	Grizzly .	Wyoming .	T. W. H. Clarke.
8	0	...	...	...	...	Polar .	Spitzbergen .	A. Barclay Walker.
8	0 (D)	3 11	...	...	...	Grizzly .	Brit. Columbia	Sir Peter Walker, Bart.
-8	0 (C)	...	...	...	735	Do. .	New Mexico	Montague Stevens.
-7	11	...	...	...	800 (about)	Brown .	Norway .	Capt. Gerard Ferrand.
-7	9	...	...	...	...	Snow .	Kashmir .	Major C. F. Blane.
7	5½	...	...	...	...	Black .	Wyoming .	T. W. H. Clarke.
-7	1	...	...	...	...	?	N.W. Terri- tory	James J. Harrison.
-7	0¾	...	...	...	680 (about)	Brown .	Lithuania .	Prince Radziwill.
7	0	3 2	...	...	...	Do. .	India .	Major A. E. Ward.
-6	11	...	...	...	...	Black .	Wyoming .	James J. Harrison.

¹ Skin measurement.² Measurement of head in the flesh from tip of nose to base of skull, 29 inches; between ears, 16 inches.

BEARS (Ursidae). Skins—continued.

Length from nose to tip of tail.		Height at shoulder.		Girth.		Weight.	Species.	Locality.	Owner.
ft.	in.	ft.	in.	ft.	in.				
-6	10	3	0	4	4½	423	Sloth	Kuch Behar	Maharaja of Kuch Behar.
-6	9½	...	...	25	forearm	...	Snow	Kashmir	S. V. Occleston.
-6	8 (B)	...	...	...	...	...	Snow	Do.	A. Ezra.
-6	6	...	...	...	...	...	Grizzly	Wyoming	Count E. Hoyos.
-6	5	...	...	...	...	...	Do.	Do.	J. L. Scarlett.
-6	4½	...	...	...	...	...	Snow	?	Capt. H. M. Biddulph.
-6	3	...	...	...	...	...	Grizzly	Wyoming	J. L. Scarlett.
-6	2½	...	...	...	...	...	Black	Brit. Columbia	Count E. Hoyos.
-9 6	2	...	...	...	...	...	Grizzly	Cent. Prov.	Capt. M. M'Neill.
-6	1½	...	...	...	...	...	Sloth	Mandla, Cent. Provinces	Capt. B. H. Boucher.
-6	1	...	...	...	...	...	Cinnamon	Wyoming	James J. Harrison.
-6	0½	...	...	...	...	...	Snow	Chamba	Do.
-6	0½	...	...	...	...	...	Sloth	Hyderabad	Count E. Hoyos.
-6	0	3	0	...	...	280	Do.	?	The late Col. G. P. Sanderson.
-5	10½	3	0	3	4	...	Red	?	Capt. H. M. Biddulph.
-5	10	...	...	...	...	...	Black	Kashmir	Major C. F. Blane.
-5	9	...	...	...	...	...	Sloth	Cent. Prov.	Capt. M. M'Neill.
-5	8	...	...	...	...	...	Do.	Do.	James J. Harrison.
-5	5½	...	...	...	...	216	Do.	?	Capt. H. M. Biddulph.
-5	5	2	5½	2	10½	250	Black	Brit. Columbia	Count Scheibler.
-9 5	2½	2	11½	4	4	about 600	Grizzly	Do.	Do.
-5	2 (A)	...	...	...	...	...	Brown	W. Caucasus	St. George Littledale.
5	2	...	...	...	...	...	Snow	Chamba	Capt. B. H. Boucher.
-5	1½	...	...	...	...	200	Brown	Wyoming	Count Scheibler.
-9 5	1-65	...	...	...	...	about	Snow	Kandgoot	Viscount Edmond de Poncins.
-4	11	...	...	...	...	...	Sloth	Ganjam District	M. Loam.
-4	9-65	...	...	...	...	...	Do.	Odeypore	Do.
-4	7	...	...	...	...	...	?	Asia Minor	H. O. Whittall.

N.B.—Some of the specimens entered as "Grizzly" may be the barren ground bear.

WALEUS (*Odobœnus rosmarus* and *O. obesus*).

The unwieldy seal-like animals commonly known by a corruption of the Scandinavian name valross (whale-horse) form in some respects a connecting link between the true seals and the eared seals, although differing from both in the huge upper tusks which depend from the muzzle of males and females alike, as also by the thick yellow bristles covering the muzzle itself. Like the true seals, walrus have lost all traces of external ears, but, unlike the former, and like the eared seals, their huge hind-flippers are turned forwards beneath the body when on land. The molar teeth, which are adapted for crushing the shells on which these monsters feed, have simple flattened crowns, quite unlike those of seals. Although young and adolescent walrus have a fairly thick coat of yellowish fur, in old individuals the tough hide becomes almost bare, except for the aforesaid bristles. Walruses are estimated to attain a weight of from 2250 to 3000 lbs.

Walruses are exclusively confined to the Arctic seas, where they spend much of their time on the ice. There are two kinds, now generally regarded as separate species; the one confined to the North Atlantic, and the other to the North Pacific. The distribution of these animals is by no means of circumpolar extent, the Atlantic walrus (*O. rosmarus*) apparently not ranging on the Asiatic coast east of the mouth of the river Lena; while in America they do not appear to inhabit the vast extent of coast lying between the western shore of Hudson Bay and Alaska. The Pacific walrus, which is the larger animal of the two, with considerably the longer tusks, always had a restricted range, and is now becoming very scarce. In European museums it appears to be represented only by skulls and tusks, and even these are rare. Formerly the Atlantic walrus occurred in countless thousands, but in accessible situations its numbers have been greatly reduced, owing to incessant persecution for the sake of its valuable oil and ivory. Between 1870 and 1880 at least 100,000 of these animals are estimated to have been slain.

The largest walrus ever shot by Mr. W. Livingstone Learmonth measured 12 feet 8 inches in length, and the tusks when extracted measured $25\frac{1}{2}$ inches in length and $8\frac{1}{2}$ in circumference at the largest part, but, as is the case with nearly all old bull walrus, the tusks were much broken at the points.

WALRUS (*Odobœenus rosmarus* and *O. obesus*)—*continued*.**TUSKS.**

Total length of tusk.	Weight. lbs. oz.	Girth.	Locality.	Owner.
36	...	...	?	Sir Thos. Hesketh, Bart.
32 $\frac{3}{8}$	...	8 $\frac{3}{8}$	?	Bethnal Green Museum.
-31	6 1	...	...	F. Gordon George.
29	...	9 $\frac{1}{4}$	Arctic North America	C. C. Branch.
28 $\frac{3}{4}$	...	9 $\frac{3}{4}$	Do.	Do.
-25 $\frac{1}{2}$	...	8 $\frac{1}{2}$	Baffin Bay	W. Livingstone Learmonth.
-19	...	8 $\frac{1}{2}$	Spitzbergen	Alex. R. Alston.
...	Length from gum. 22 $\frac{1}{2}$	7 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
...	20 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	Sir Victor Brooke's Collection.
...	18 $\frac{1}{2}$	7 $\frac{1}{2}$	Do.	Arnold Pike.
...	18	7 $\frac{1}{2}$	Do.	Earl of Dunmore.
...	15 $\frac{1}{4}$	6	Kolguev	A. Coats.
...	12 $\frac{1}{2}$	7 $\frac{3}{4}$	Do.	Do.

NARWHAL (*Monodon monoceros*).

The narwhal is the only member of the Cetacean or whale order furnished with tusks. These are present only in the male, and generally the left one alone is developed. Occasionally, however, both grow, as exemplified in a specimen in the British, and a second in the Cambridge Museum. A model of the animal is exhibited in the British Museum.

Distribution.—Arctic Seas.

The following measurements refer to tusks:—

Length.	Circumference.	Weight.	Locality.	Owner.
ft. in.		lbs.		
8 8 $\frac{1}{2}$	8 $\frac{3}{8}$	...	Arctic Seas	Bethnal Green Museum.
8 7 $\frac{1}{2}$	8 $\frac{1}{2}$	14	Do.	Rowland Ward.
8 3 $\frac{1}{2}$	7 $\frac{3}{8}$	...	Do.	Bethnal Green Museum.
8 3 $\frac{1}{2}$	7 $\frac{7}{8}$	...	Do.	Hon. Charles Ellis.
8 3	7 $\frac{3}{4}$	17	Do.	Rowland Ward.
7 10 $\frac{3}{4}$	8 $\frac{1}{8}$	...	Do.	Hon. Charles Ellis.
7 9	8 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
7 0	6 $\frac{3}{4}$	...	Do.	Duke of Westminster.

SUGGESTIONS FOR RECORDING THE LENGTH OF ANIMALS IN THE FIELD.

As the animal lies on the ground, and where circumstances permit, proceed as follows :—

Length. Pull the nose and the tail so as to get it in as nearly as possible in a straight line. Fix four pegs in, one at the end of nose, one at end of tail, one at root of tail, and one at the nape of neck behind ears.

Height at shoulder. Put the leg or paw in a standing position and place a peg at top of withers and measure carefully standing height (a) with extended paw, (b) with spread paw, as well as length of fore and hind legs from pegs at the stomach line.

The columns in the game-book would thus be as follows :—

A to F. Straight length from nose to tip of tail.	P. Girth of head.
A to E. Length along curve to root of tail.	D to G. Height of hind-quarters.
E to F. Length of tail.	C to I. Height at shoulder.
A to B. Length of head to nape of neck.	K to L. Length of fore-leg.
N. Girth, upper arm.	H to G. Length of hind-leg.
M. „ forearm.	Weight, cleaned.
O. „ of body.	„ not cleaned.
	Cleaned skull (length, breadth, height, weight).

The above measurements together with the note of its sex, estimated age, where and when killed, condition of the animal, with any other features of interest, such as colour of the eyes and skin, length of the hoofs, condition of teeth, weapons used and effect of bullets, etc. etc., will be of interest.

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